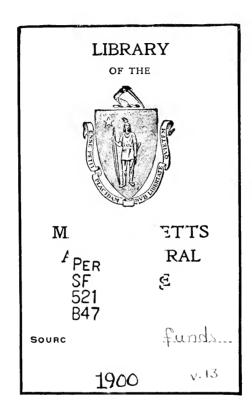
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The American Bee Keeper is a live monthly and has been published by us for the past ten years—50 ets, per year.

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Untested June, July, Aug. and Sept.

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All other months, \$1.00; 6 for \$5.00. Tested, June, July, Aug, and Sept., \$1.25; 6 for \$6.75. All other months, \$1.50; 6 for \$8.70.

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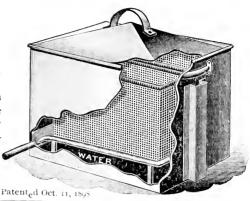
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AN OUT-APIARY BELONGING TO W. J. PICKARD, OF RICHLAND CENTER, WIS, --MANAGED BY MISS PICKARD.

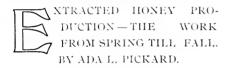
The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers. \$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL X.II, FLINT. MICHIGAN, JANUARY IO, 1900. NO. I.



It has been said that, "Eternal vigilance is the price of success" in any busi-



ness; and apiculture is no exception. Hence we need to be vigilant in early spring so as to know when to remove the bees from the cellar. My plan is to watch the soft maple trees. How eagerly I

watch the trees from the first bursting of the buls; and when I see the red of the bloom actually begin to push forth, with what a thrill of pleasure I say; "The bees can get out on the first good day."

In former years we did sometimes carry the bees out earlier, because they seemed uneasy, but I doubt if we gained anything by it. Then, too, we watch the thermometer and the clouds, and in a few days there comes a day with the sun shining, and the mercury about 45° or 50°.

We engage our help the evening previous to taking the bees out in the morning. The evening before, we open all the doors of the cellar, so as to give the bees all the fresh air possible. At first the bees will become uneasy and make quite a roaring, but usually they will be very quiet in the morning. If the next morning promises to be a fine day, we begin to take the bees out as early as possible, so as to get them all out in one day. We carefully let the hive down on the bottom-board (as we have each hive raised one inch from the bottom-board in front, so the bees can more easily rid their hive of the dead bees), and then place two hives upon a stretcher made of two pieces of straight timber with strips nailed across, and handles at each end so that two men can carry them. By carrying the bees on a stretcher they can be moved from the cellar without jarring them very much; especially if two men of equal size carry the stretcher. The first hives taken out are placed upon the stands farthest from the cellar, so they will not be disturbed in passing with the others; also for convenience. Some object to carrying out many colonies at a time, for fear of their swarming out from the excitement of so many flying at once, but I should prefer

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to have them all out on the stands ready for flight at once. If one can, it is a good plan to take them out at night and have them placed upon the stands ready for flight in the morning; and in this way the bees can mark their location when they come out of their hives; and it remains the same when they return. When carring out in the day time, the bees out first commence to fly, and as they come out, they mark their location, while the surroundings are being constantly changed by the addition of more hives; and I believe there is greater danger of their mixing up. One objection to taking the bees out at night is that we cannot tell what the weather will be the next day at that time of the year.

After all of the colonies have had a good cleansing flight, we proceed to overhaul the entire apiary. No colony, unless there is some special reason, such as immediate starvation, is opened until after the bees have had one day for a good cleansing flight. This flight is usually taken on the day of setting out. times, however, a few of the last hives set out may have been placed out so late in the day that very few of their inmates fly until the next day. However, after the bees have taken this flight they are ready for the overhauling on the first fine day; for there may happen to be one or more days when the bees cannot fly, and if frames of brood were taken out there would be danger of chilling the brood. Besides, I do not believe it is good for the bees themselves to be stirred up on cold days; and it certainly is not pleasant for the operator.

Now let us proceed to the overhauling. I provide myself with a small "peach-basket," as a tool-basket. The basket I find very convenient, as it is light and handy to carry, and will hold all the necessary tools. My tools consist of a scraper, an old file for loosening the frames, a brush, and a Bingham smoker.

Now that I have my tools ready, I go to hive No. 1, having beside it a hive, bottom-board, and cover which has been

previously cleaned. I gently give one or two puffs of smoke at the entrance, then carefully loosen and remove the cover. Then I puff a little smoke over the topbars, and with the file in one hand and the smoker in the other, I carefully loosen the frames without jarring the bees any more than possible. I think the more gently one can handle bees the less stings one will receive.

Transferring the bees into the clean hive is the next operation. The hive containing the bees is set to one side, and the bottom-board and hive placed upon the stand. I first place a comb containing honey and pollen in one end of the clean hive, then the combs containing the bees and brood, and then one or two empty combs, according to the strength of the colony, and, last, a good comb of honey to serve as a division board. This method contracts the colony down to the number of combs that it can use to a good advantage. When all the combs needed are placed in the clean hive, the rest of the combs are taken to the honey house and carefully stored by themselves; then if a worker comb is wanted, we will know just where to find one, as we use drone combs for the extracting combs, and it is quite as necessary to have order and system in the honev house as in the home. Each colony is treated in a like manner, and then the bees remain untouched for ten days or two weeks. By that time more room is required, and we again look through each colony, and put in sufficient combs to last until another visit can be made. overhauling we each time make sure that there is an abundance of honey in the hive so that breeding will not cease; as an ample supply of honey insures plenty of good healthy bees.

The second time we overhaul, if we find any colonies especially weak we give each of such a frame of hatching brood from a strong colony; thus making both colonies in better condition. The frame of brood strengthens the weak colony and weakens the strong one enough

to retard swarming until the proper season. At this time, too, we find the queens; and if their wings are not clipped we clip them, and make a memorandum of it as follows: No. I [q. cl. '99], showing the queen was a clipped queen; and No. 2, [cl. q. '99] showing the queen was clipped in 1899. We make a practice of disposing of a queen after she is two years old, as the success of spring-building-up depends upon good young queens.

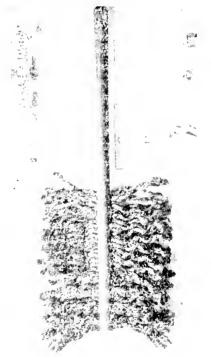
In our locality the basswood is our principal crop; and the flow usually begins about the first of July; so we work the entire spring with that thought in view; and build the bees up accordingly. About the first of May we overhand with the thought of spreading the brood and getting as many young bees as possible for the honey flow. When the broodchamber becomes full of bees and brood we place another set of combs above, thus giving the queen more room, and retarding swarming.

Before going any farther I will describe the hive we use. It is the Gallup hive, 14 x 20 inches, and 121/2 inches deep, with 12 frames which run crosswise the hive. I suspose some will differ from me, and say some other hive is the best. Some other hive may be better for some one else, but ours is the best for us. I prefer it for a number of reasons. First, it is easier to build up colonies in the spring in short combs than in long ones; second, the short combs are much easier handled; third, the hive contains a large amount of comb; fourth, the bees can store honey enough for winter use in the combs, and last, we are better accustomed to this hive after so many years of use. We are not, however, such "cranks" on the hive question as to believe that success lieth in the hive.

After the bees are built up strong, and just before the honey season opens, we put the extracting supers on with nine drone combs in each super. I will add here that we use the zinc and wood queen excluders between the brood chambers and extracting supers. By using only

nine combs the bees have built the combs out thick, and it is certainly a great advantage in several respects. We have more honey stored in less combs, thus making fewer combs to handle, and enabling us to extract more honey in less time. We also economise by using the thick combs for extracting, as there is less money invested in combs.

In taking the honey from the hives we hold the comb by the ends of the top bar between the thumb and fingers, raising the comb and giving it two sudden shakes. This removes most of the bees from the comb, when the comb is held in the left hand by one end of the top bar while the bees are brushed off with a brush held in the right hand. The brush is one of our own contrivances. It is made thus: take



THE PICKARD BEE-BRUSH.

a piece of broom handle about eighteen inches long and saw a slot in the end of the piece, lengthwise, about six inches long. Take some rope and cut it into pieces eight inches long, then unravel the pieces and draw the middle of the pieces down the slot in the handle until the slot is full, thus making a brush on each side. Fasten by nailing the ends together, or by wrapping wire around the end of the handle. This brush is very durable, soft, and pliable, and will not injure the bees. It may be washed when it becomes sticky with honey.

After the bees are brushed off, the combs are placed in a box upon a wheel-barrow. When the box is filled it is taken to the honey-house. This box for transferring the combs to the honey-house is made out of a cracker box, by putting handles on the ends, and pieces on the inside on each side about an inch from the top, to hang the combs upon.

In extracting we have an organized crew; each man having his own work. One man wheels the honey to the house, another uncaps and fills the barrels, and another turns the extractor. We have an uncapping can with a wire basket hanging inside the can, in which the cappings are dropped and allowed to remain until the honey drains out, when they are put to soak in water, the liquid being used for making vinegar. The cappings are finally rendered into wax which is converted into foundation. The extractor we use is the Cowan Reversible. which is a great improvement over the Novice, as one does not have to stop and take the combs out to turn them.

After the honey has been extracted and strained it is drawn off into barrels, each holding two hundred and fifty pounds. We prefer this size package because it is commodious, and well adapted to the storing of large quantities of honey which could not be cared for so easily in small packages; and also because it is a very cheap package.

I will next tell how we establish our out-apiaries. In establishing out-apiaries we first look for a locality not having an apiary, but having a flowing stream, with soft maples and willows for spring pasture, white clover for June pasture, and.

last, but not least, an abundance of basswood, upon which our principal crop depends. After finding a desirable locality, we look for a suitable piece of ground upon which to place the apiary. ideal would be an eastern slope with protection on the north and west from the spring winds, and only rolling enough for drainage. The ideal is sometimes difficult to find, although we have it for one of our apiaries. After satisfying our own minds that we have found the proper location, we interview the owner as to the possibility of our placing an apiary upon his farm. Usually it is easy to get the consent of the farmer. We have established several out-apiaries, and, with one exception, were never refused the permission of placing an apiary upon a farm.

After getting permission, we make an agreement with the owner as to the size of the piece of ground, and the price for rent, and proceed to make out a written contract containing the statement of the size of ground, price and term of years. When the contract has been completed we first fence the piece of ground with a good barbed-wire fence of five wires, and then lay it off to suit our fancy and convenience; then build a little building about 12 x 16 for a honey-house. thing we are very particular about in the building of our house, and that is to have it built so well as to exclude bees. are now ready to move our bees and place them upon the stands, when we have our apiary established for a term This work is done in the of years. spring. In fixing the bees ready to move we fasten the frames in each hive, remove the cover, and place a wire screen over the top of the hive. The screens are made by using pieces of wire screen fastened to a frame the size of the hive. When the frames are fastened, and the screens put on, we close the entrance securely, and the hives are ready to be loaded upon a large, flat, hay-rack made ready for the occassion. We usually place about twenty-four colonies upon one

rack. When the bees arrive at their destination, and the colonies are placed upon their stands, we then water each colony by sprinkling water with a brush upon the screens, using the bee-brush previously described, and then in about an hour we water them again and release them.

roof. The doors are made of matched pine lumber, and a door hung on each side of the casing; one swings inside the cellar and the other outside, and the entrance is enclosed with a slanting door made of matched pine. We have two ventilators from above which extend to about four feet from the floor, and pass



CARRYING BEES INTO THE BEE-CELLAR.

When Autumn comes we build a cellar to winter the bees in; as we winter in cellars at each apiary. One advantageous thing about having a slope near the apiary is in constructing the cellar. celtar for wintering bees is an excavation in the hill, 11 x 20 fect, and 7 feet deep. It has a stone wall 18 inches thick. Next is a plate 2 x 6 imbedded in mortar, and upon this plate are placed the joists. The space between the plate and the joists is filled with stone and mortar. Some cheap lumber is placed upon the the joists for a floor, and the floor covered about three feet deep with saw-dust, and all is then protected by a shingle-

up through the roof. There is also a subterranean ventilator which supplies the cellar with pure air. The ventilation I consider a very important affair. No matter how well ventilated the hive may be, if the cellar in which it is placed contains nothing but foul air, how can there be good air in the hive? With good pure air in the cellar, and an entrance in each hive 12 inches wide and 1 inch high. I do not have any anxiety about the ventilation. Our cellars are so perfectly built that the out-door air does not effect the cellar; the temperature remaining about 15 at all times. Before putting the bees in the cellars we place a bushel

or two of unslacked lime in each cellar to take up the moisture; and we also sprinkle lime around the walls to sweeten the cellar. I like to get the bees into the cellar before the hives have had a chance to contain any ice or damp combs from the congealment of the bees' breath. is also desirable to have them placed in the cellar before the outside of the hives is wet with snow or rain. In the cellars we have benches twelve inches from the floor upon which to place the hives. piece of wood one inch thick is placed upon the back side of the bench before the colonies are placed upon it, and then we raise the front of the hive one inch from the bottom-board, thus giving them an entrance 12 x 1. This gives plenty of ventilation, and also allows the bees to more easily rid their hives of the dead bees. The whole problem of cellar wintering, which has long since been worn thread-bare, may be summed up in a very few words; have an abundance of healthy food, an even temperature and plenty of good ventilation.

RICHLAND CENTER, Wis., Dec. 14, 1899.



OW FAR BEES MAY FLY IN
GATHERING NECTAR. BY
IRA BARBER.

Noticing the answers to the question: How far will bees go in search of honey? leads me to give you, for pub-



lication, a few of the surprises that have come under my observation along this line.

My first experience with Italian bees was in the spring of 1874; having bought seven colonies the fall before, and placed them

in the yard with about too colonies of black bees. No other Italian bees were owned in Northern New York. When dandelions were in bloom, plenty of Italion bees were seen five miles from my home; working on dandelions.

The night of the Chicago fire, in 1871, I think, we had a fire here in the forest that burned down two or three thousand acres of timber standing in a black ash swamp that was as dry as tinder; so the fire burned in the ground deep enough to level every tree to the ground.

The next season was a poor honey season up to August 10th; and there were few colonies in the yard that had any sealed honey in their hives. All at once quite a number of colonies became very active; and in three or four days the whole apiary was sending out all of the forces that could be mustered. They struck a gait equal to any I ever saw when they are doing their best on basswood; and all were going north, towards the great fire slashing.

I knew what they were working on; but as to how extensive the supply was I had no knowledge. It was of too much importance to me to be guessed at; so, on the third day after the bees had made such a rush, I drove to the fire slashing, which was four miles in a direct course to the nearest point. I had to walk about one mile through the fields, after leaving my horse, as there was no road leading to it.

When I got there such a sight I never saw before. One vast field of celandine, or touch-me-not, lodged down like a rank growth of clover, where not held up with brush or logs, and such a roaring of bees I never heard, when working on any honey producing plant. The slashing was five miles long, and from one-half mile to one mile wide, and one solid bed of celandine.

Bees working on this plant always come home with their backs covered with pollen white as chalk, as they have to enter the flower to get at the honey, and, in so doing, they get the pollen on their backs and shoulders.

My bees covered this whole field, which took them away from home somewhere between eight and nine miles. All the Italian bees in this County at that time were around in my immediate vicinity, and Italian bees were just as plentiful at the extreme end, as at the nearest point.

My crop of honey was 5,000 lbs. of nice, white comb honey, all in five-lb. glass boxes, and sold to M. Quinby for 25 cts. a pound.

This was the first and only time that I have ever got pure celandine honey; for the reason, there was nothing else this time for them to mix with it.

I am located in what may be called a level country for six or eight miles all around me; so that basswood comes into bloom so nearly all at one time that it lasts only ten or fifteen days as a rule; but, south of me, eight miles from home, the land becomes so much higher, and continues to rise as it goes toward the Adirondack mountains, so that the basswood does not come into bloom there until just about the time that it goes out of bloom in my vicinity; and my bees always follow up the bloom, and work on for a week or more after there is nothing but seed balls left on the trees near here.

They have to go eight miles, in the direction they take, before they reach the woods; and how far they go into the woods I do not know.

The only seasons they do not go there when basswood blooms, is when there is a frost in that high altitude in the spring that kills the buds.

There is one thing that I never could understand. When bees are working such a long distance, they carry just as strong a gait as when they are supposed to be gathering honey near their home; but I think they must send out a larger force, for surely they must use a good deal of time in making these long trips.

In the spring of 1897, about the middle of May, there was a frost here that killed all the basswood buds on all of the low land, for a distance of eight miles all around me, and also on the high land south of my place, that I have mentioned above, but east of my place is a high range of land called Waterman hill, where snow can be seen, fall and spring, lying there for days at a time, while the weather is warm, and there is no snow at all on the low land between my place and this high range. With the use of a good glass, this high range can be plainly seen from my place any time, and, when the snow is on, the white line is plainly seen by the naked eye, lying up there, above all the trees between my place and this high range.

All the comb honey that I got in 1897 was basswood (3000 ibs.) brought from this high range, ten miles away. I had 150 colonies in the yard, and, in going and coming, the bees did not occupy more space than an ordinary swarm would in decamping for the woods; and they could be seen and heard miles from home, all in a line, the same as they were fifty rods from their hives.

Bees appear to prefer to go a long distance to gather honey, when there is plenty near by. When five miles from home, I have seen my bees, near night, coming home by the thousands from working on alsike clover, when there was a perfect sea of alsike clover blossoming on my own farm and all of the farms joining me; and scarcely a bee to be seen—one would have to watch and listen quite a while to see one.

In the honey season the only time that I can get away from home is near night; and, in passing, on my way, between four and five miles away from home, a valley one-half mile wide, on the west side of the road, when the sun is getting low, every atom in the air can be plainly seen, and here is where I have seen my bees continually passing me as I am driving along. There could be no mistake about their being mine as there were no other bees on the road.

Again, I have seen basswood blossoms fairly afloat with nectar right in my beeyard, with colonies right under the branches, and remain there all day with scarcely a bee to be seen on them, while the entire force of the yard was going miles from home, in search of the same kind of honey.

In conclusion I will say that the beekeeper who has a large yard of bees, and counts his crop of honey by the ton, and supposes that it is gathered in a two- or three-mile range, has but a limited knowledge of the range that his bees will occupy.

DE KALB JUNCTION, N. Y., Dec. 6, 1899.



OF THE CLUSTER.
BY HARRY S. HOWE.

A discussion in the Review leads me to look up the subject of hive-temperatures. Among the literature on the subject I found a thesis written for



the degree of B. S. by Mr. H. C. Mc Lallen, in Cornell University. This I have reviewed, and think it may be of interest from two points of view; one to show the class of work undertaken at Cornell, the other on account of its prac-

tical bearing upon the wintering problem.

In these experiments eight colonies were used. Three were wintered in the cellar; the others out of doors. In each hive a thermometer was placed so as to have the bulb in the cluster. In part of the hives there was also one out of the cluster but in the same hive. The readings of these were taken twice each day.

Owing to the bees moving away from the thermometer there was occasionally great fluctuations of temperature, which I have taken no account of in this resume. It was also found that when the bees were disturbed the temperature would suddenly go up three or four degrees. For purposes of comparison the winter has been divided into seven periods during which the average daily temperature of the atmosphere was about the same. In the thesis curves were given showing the variations of temperature for each twelve hours, but the table on the opposite page will show the results fairly well.

The figures I have given in round numbers; disregarding the fractions in the original. It will be noticed that the temperature of the cluster was lower in the cellar than out.

It will also be seen that the changes in the outside temperature were followed by similar ones in the cluster. This is shown in a still more striking manner in the table showing the temperature by day.

At the time of packing and of setting out in the spring the honey and the bees in each colony were carefully weighed.

By a study of the table given it was shown that the colonies having the lowest average temperature used the least amount of honey to the pound of bees.

One of the aims of Cornell is to work out things of practical value in each department. It is to be regretted that Mr. McLallen did not follow his experiments through the whole year.

ITHACA, N. Y., Dec. 8, 1898.



SELECTED BY A. B. MASON.

TALKING BEES AND HONEY TO SCHOOL CHILDREN.

It seems that the example of the editor of the American Bee Journal is becoming contagious, for in the October number of the Progressive Bee-Keeper editor Leahy says:—

Following the lead of Bro, York, we have obtained permission from the board of directors of our public schools in Higginsville, to address the scholars on the subject of bee-keeping. We will procure a hall that will seat all the children and the teachers, and each teacher, some afternoon in November, will bring his or her pupils to this hall where the address will be delivered.

I believe we as bee-keepers and honeyproducers owe Bro. York a vote of thanks for inangurating such a course. Such to have a taste of the delicions sweet; and perhaps at the same time incidentally mention that certain parties, or certain business places, have this delicious sweet for sale; and a few sample copies of the different bee journals could be distributed were it not for the fear that some of our fraternity would feel sad because of the possibility of inducing others to join our "overcrowded ranks," and so increase the supply and decrease the demand for and price of our products.

	Jan. 4 to Jan. 2_3	Jan. 24 to Feb. 7	Feb. 8 to Feb. 14	Feb. 15 to Feb. 19	Feb. 20 to Mar. 4	Mar. 5 to Mar. 20	Mar. 21 to Apr. 10	
Average temperature in the open air.	33	19	40	2.1	31	48	43	
Temperature in outdoor hives but not in cluster.	45	41	51	42	45	64	64	
Temperature of cluster in outdoor hive No. 1.	7 I	74	75	72	72	81	83	
Temperature of cluster in outdoor hive No. 2.	66	65	68	6.4	165	76	77	
Temperature of cluster in outdoor hive No. 3.	68	68	71	63	67	80	86	
Temperature of cluster in outdoor hive No. 4.	73	78	79	74	74	80	So	
Temperature of cluster in outdoor hive No. 5.	71	7.5	so	79	77	83	84	
Temperature of cellar.	46	41	49	4.3	46	52	52	
Temperature of cluster in cellar hive No. 6.	65	68	71	65	70	75	75	
Temperature of cluster in cellar hive No. 7.	62	55	59	54	56	62	62	

lectures may be valuable in more ways than one; "blessing those who give and those who take." Those who listen will receive something of real and lasting benefit, and those who give will have the consciousness of at least attempting to "do good to others," which is a virtue, and "virtue is its own reward." The parents of the children, and others, might in some localities (for localities differ) be invited to attend these lectures. To some of the listeners large drawings of the most important parts of the bee would be of interest and value.

If the person giving the address is either a honey producer or dealer in honey, he could add much interest to the address by having nice honey on exhibition; and perhaps some in such shape as to allow those who seem most interested

CONSIDER WELL THE LOCALITY.

In the November number of the Progressive, editor Doolittle seems disposed to make sport of my using the word "loeality" so often; for in referring to something that that prince of writers among bee-keepers, Mr. R. C. Akin, has said, ve editor says, "And for the reason he, like Dr. Mason, is shouting "Locality." Well, all I have to say is that Doolittle has largely ceased unqueening, but instead of shouting, "Locality! Locality!" Doolittle is shouting, "Hosts of bees when any and all honey flows are on, lots of section honey, and no swarming." and that right in the old locality where he has kept bees for the last thirty years. I don't quote what editor Doolittle savs for the purpose of trying to show, or convince, him that localities differ, but for the purpose of

calling attention to the importance of "locality," the conditions that prevail in different localities, and the importance of "locality." the conditions that prevail in different localities, and the importance of believing in, and with, Doolittle shouting, "hosts of bees when any and all honey flows are on." I had supposed that all intelligent bee-keepers were aware of the importance of having "hosts of bees" when "honey flows are on," but I'm more than pleased to learn that Doolittle is on the "up grade," and that although he may think "unqueening" and "locality" cut no figure (?) in the production of honey, he has finally found out that "hosts of bees" are of importance in honey production, and is "shonting" for them. It is said that "large bodies move slowly," and here is an exemplification of the fact; but oh my! when they do get under motion it takes a good deal to stop them; and when they get to going in such a laudable enterprise as "shouting, hosts of bees" etc., we should feel like cheering them on in their upward course.

In the Progressive for August, Mr. S. P. Cully says:—

The locality question has been discussed and discussed upon until it seems to have become a fad or hobby with some writers, and a by-word or joke with others. Still, in spite of exaggeration and belittlement, it has a rank of importance that should be as well and as clearly defined as may be understood—especially by the A B C class. Closely related to locality is the variations of the seasons in each locality, and also the gradual changes of conditions brought about by changes in the local flora. It is important, yes, essential to any marked success, that the bee-keeper adopt a system of general management suited to his locality. * * * Surely it would be folly to leave the consideration of locality out, or even in the background, when devising or adopting his system of management. other words, the general system should be devised with reference to the locality, its sources of honey, its probable honey flows, its climate, etc."

Other prominent honey producers and writers for our bee-journals are just as emphatic regarding locality as is Mr.

Culley, and to cease to arge this important element in the production of honey, and shout only for "hosts of bees" would seem to indicate a forgetfulness of a most necessary factor in the success of our specialty.

It is not wise to take for granted that a person who has made a success in honey production in a locality where the honey flow does not begin till mid-summer, is qualified by experience to tell how to make a success of the same business where the flow, although but light much of the time, begins before the frost is out of the ground in the spring and continues till frost cuts off the supply in the fall.

Again, in the September Progressive, Mr. Culley calls attention to the importance of our environment by saying:—

Of course, this fact shaped his management of his apiary, and the same should be true of all bee-keepers. For me to attempt to produce comb honey in my locality, with profit, when compared with extracted honey, would be utter folly, when I can get a fair crop of the latter nearly every season and dispose of it at home for a fair price, when the production of comb honey would prove a failure in a large majority of seasons.

FOOD VALUE OF HONEY.

In thinking over the good that may be done by addresses on bee-keeping in our public schools, as referred to in the beginning of this article, I recall the splendid address of Prof. Wiley, (chief chemist for the U.S. Department of Agriculture) given at the recent Philadelphia convention of the United States Bee-Keepers' Association as reported in the American Bee Journal for November 23rd, page 741, in which he spoke of the value of honey as food. Prof. Wiley said:—

While honey may supply the place of starch or butter in the animal economy, it cannot supply the place of protein (that which makes bone, muscle etc., Sec'y.) Therefore, honey and meat cannot be compared as an article of diet. * * * * Honey can supply heat and support energy, but it cannot nourish tissues (bone, muscle etc.), containing nitrogen, without the help of some other kinds of nourishment, as, for instance, eggs, beans, lean meat, milk and bread.

It is very properly said that honey is one of the most easily digested foods of any class. * * * A soldier must have something to eat on the march, something concentrated and quickly assimilable, while he is not nourished by sugar alone, yet sugar or honey furnishes a condensed emergency ration of the greatest value."

Much that Prof. Wiley said on this subject would be of value in an address to the teachers and larger scholars in our schools, both public and private, and I feel sure would not be profitless if given to the students and professors of our higher schools, colleges, etc.

In referring to Root's A B C of Bee-Culture, the last edition, which is just published, I find much of interest in this line under the title of "Honey as Food," and to consult it would be a help in preparing the right things to say in an address.

BEES MOVING EGGS.

By the Southland Queen for November I see that the South Texas Bee-Keepers' Association was "convinced" by E. J. Atchley "that bees do not move and redeposit eggs," for he has proven by his "experiments for two years that bees do not redeposit eggs, nor can they do so;" but farther along in the report he says, "I have tried moving eggs into queen cells * * and in only a cory few instances did the eggs hatch;" so after all it is not a settled fact that eggs will not hatch after being moved and redeposited.

Several years ago one colony of our bees did move and redeposit several eggs and they hatched, and from one of the redeposited eggs they raised a good queen. Perhaps it would have been different if the colony had been in Texas, or under the care of some careless scientist, but it is a settled fact that in this "lo-

cality" ices do move and redeposit eggs that hatch and produce bees, and the eggs don't have to stand squarely, or true, on end either, as Mr. Atchley says they do, to do this.

GOOD PAPERS AT THE PHILADELPHIA CONVENTION.

Editor Root in Gleanings for Dec. 1st says:—

The American Bee Journal is getting out a good report of the Philadelphia convention. The paper of Prof. Wiley, United States chemist, is especially valuable.

It seems to me that all the papers read at that convention were unusually excellent. I have noticed that several of them have been copied by agricultural papers; Rev. Abbott's being more often used than any of the others. I was very much, and very agreeably, surprised at the unusual excellence of, and good sound sense in, the papers of the "amateur" bee-keepers of Philadelphia. If I dared "let the cat out of the bag'' I would say that in making up the program I put Messrs. Selser, Flower, and Hahman of Philadelphia down for papers more for the sake of courtesy to the Philadelphia bee-keepers than because I expected they would "fill the bill;" and now to be obliged to feel and say that their productions were among the most interesting and instructive makes me feel ashamed of myself for doubting their ability to do any thing well, and in first class style, that they attempt. Now, this isn't "taffy;" and I believe that those present at the convention will agree with me in what I have said about the Philadelphia bee-keepers and their contributions to the interest of the convention; and I believe that hundreds of bee-keepers who do not take the American Bee Journal would feel well repaid if they would send to editor York for the numbers containing the report of the convention. * I presume, although I don't know, that the small sum of twenty five or thirty cents would pay for them. Try it and see.

FREEZING DESTROYS MOTH'S EGGS.

Gleanings says:—

All empty combs not in the hives should be put in moth-proof boxes, hives, or rooms, where the temperature is liable to go down to freezing or lower. Combs after a good freeze, and kept away from further visitations of moths, will be safe until wanted again.

No bee-keeper ever regrets having his spare combs free from moths, and by paying attention to them now, so as to give them some good thorough freezes, and then putting them safely away from the reach of moths, he will not feel that the time thus spent is wasted. All my extracting combs are packed away in their supers in our barn, and before freezing weather is over they will be placed in our house-cellar, where we keep our bees, and left till needed next season. Some of the combs will be left in the supers, and the remainder will be hung on strips that have been nailed to the under edges of the floor joists overhead, and they will be placed at least an inch apart, and no moths will trouble them, even in the summer time, with the door and window open,

GOOD WORDS FOR CANDIED HONEY.

Another good suggestion by Gleanings editor is:—

More of an effort should be made by bee-keepers to educate consumers to the palatability of candied honey. In many a bee-keeper's home the white solid honey is preferred. It spreads better on bread, does not muss up whiskered mouths, and the small children can eat it without smearing the table-cloth.

Many bee-keepers who put honey in glass for grocers and others to sell, are in the habit of replacing such as candies, with that which is not eandied. It is quite a task to do this, but unless we ean get consumers educated in the purchase and use of candied honey we shall have to be to this trouble; but many of those who buy honey I have sold to groeers are getting to prefer, and call for, that which is candied. Several months ago I was in a grocery in this city and saw several dozen jell tumblers of candied honey that had evidently been put aside as unsalable. I saw the producers name (a Michigander) on the label, and knowing the producer well. I knew the honey was all right. I asked one of the salesmen if they had any good extracted honey for sale. He said, "No, we have some adulterated stuff we bought for honey,

but it's no good." He showed me some of it, and I soon showed him that it was first-class honey, and how to put it in the same liquid condition it was in when they brought it; and I believe they now sell more candied honey than they do of the liquid. I have thoroughly posted them on the honey question. Talk candied honey to the dealer and consumer, and give them samples to try on their bread and biscuits.

STA. B. TOLEDO, O. Dec. 21, 1899.



CONDUCTED BY R. L. TAYLOR.

The best critics are they Who, with what they gainsay, Offer another and better way.

A REVIEW OF THE MILLER-EXPERIMENT REGARDING THE AGE OF LARVA!

CHOSEN FOR QUEENS.

In June and July last Dr. Miller made a somewhat elaborate experiment to confound if possible those who claim in opposition to him that if a colony of bees is made queenless and given brood in all stages it will not rear so good queens as if the brood is scientifically selected for them, or as they do in preparing for swarming, or in superseding. I say the experiment was made for that purpose, but that is only my supposition; for the doctor gives us no light on that point exeept in his remark upon the general result that "in some respects it is not what I desired and intended the bees should give, but they are to blame for that and not I." [Gleanings, 834.] It gives me great pleasure to welcome him to the field of the somewhat exact science of experimentation; and, although his first attempt seems to abundantly prove what I suppose he set out to disprove, I trust he will not become discouraged and

turn back after putting his hand to the plow; for I have heretofore found it a bit difficult to hold him to the point, much more to bring him to the acceptance of the truth in the somewhat loose science of grammar, or of principles sustained by the argument of mere prose language, and I hope, since he has come into this domain of hard facts, we may be able to stand sometimes upon the same plank.

The experiment was in many respects well-conceived, and well carried out, and although defective in some points, at least in the observations taken, that is a thing to be looked for in a first attempt. His general plan was to procure the depositing of eggs in a series of combs (five in this case), one after the other, so that the time when the eggs were laid in any one comb is known within a few hours, and then to give the combs, the oldest containing larvæ more than three days old, and the newest eggs not yet ready to hatch, to a colony presently rendered queenless and deprived of other brood, and then to observe frequently, and to take note of the age of larvæ devoted to royalty at the time they are selected for that purpose. To distinguish them, the combs are lettered "a" to "e" inclusive. a was inserted for eggs June 28, 10 A M.; d and ewere inserted July 3, at the same hour, though neither the hour of insertion nor removal were at all regular b and d were removed the next day after insertion; c and e on the second day. All these combs, as they were removed, were put in the super of a queened colony to receive proper care. On July 5, at 4 P. M., this colony was unqueened and all brood removed except that in these combs which was left for the colony to select larvæ from for queen rearing.

It is very tantalizing in so important an experiment to be left without any further information concerning the condition in which the colony and combs were left. Did the colony have other combs without broad in the lower story? Were the experimental combs placed in the lower story, or left in the super? In what or-

der were they arranged? The doctor says the colony was "tolerably strong"—a very indefinite description. These points have each an important bearing, I think, and I shall touch on one or more of them later.

After the unqueening, the colony was examined once each day, for results, from July 6 to July 13 inclusive, with the exception of July 9, and notes taken at each examination of new cells begun upon each comb; when, of course, it would be a mere matter of substraction to determine, within the limit of time allowed for the depositing of eggs in that comb, the age of each larva at the time it was selected to be fed and housed for the production of a queen. In all, thirty six queens were produced; and, if we are to accept the doctor's figures.

- 15 larvæ were selected when within 3 days of age.
- 12 larvæ were selected when it was doubtful whether they were more or less than 3 days old.
- 9 larvæ when more than 3 days old.

Three days is accepted as the limit of the age of a larva when selected by the bees, for the production of a good queen; so this experiment is a very important one; and it is no less important that its results should be correctly estimated; so I have taken pains to verify the doctor's figures and statements by appealing to his facts. The doctor says "I must not evade the observation that something more than 512 days after the removal of the queen the bees started cells over too old larvæ when younger larvæ were present." And this, which I suppose may be taken as the doctor's final resume of the more important results of the entire experiment; "If the combs with the cells be taken within the first five days [of queenlessness] and put in the upper story of a colony having a laying queen there will be no too old larvæ in the case."

I am quite a stranger to the reasoning used to reach these results, but let me try its use and see what effect it will have, for instance, on the table just given. Such a course of argument would make the table stand time:

- 15 larvæ were selected when young enough.
- o larvæ were selected when of doubtful age.
- 21 larvæ were selected when too old.

The doctor takes one extreme in his foregoing statements, and I have here taken the other. He counts, when there is doubt, that the bees will select only those larvæ three days old or under; I, that they will select only those older than three days. Both processes are equally valid; or, rather, equally invalid.

started cells—keeping in mind that the colony was unqueened July 5 at 4 P. M.

Again, with the table before us, if I may once more use the kind of reasoning employed by the doctor, I find by inspection that at the very first examination two cells are found on comb b begun on larvæ selected when too old for the production of good queens; and at the second examination, two days after unqueening, three more cells are found on comb b containing larvæ selected when too old; and again the argument by which he established his statements, and this one I have used, are both alike fallacious. His

Day and hour of examination for cells.	Comb.	No. of cells discovered.	Age of youngest larvæ at previous	orservation.	Age of youngest larvic at time of observation.		Age of oldest larvæ at time of obser-	vation.	Limit of time within less than which it is impossible to fix the age of selected larvie.		
July			days 1	iours	days	hours	days	hours	days	hours	
6, at 10.30 a. m.	b	2	2	2	2	2012	3	2212	1	2012	
	c	s	minus	18		1,2	1	$18\frac{1}{2}$			
7, at 4.00 p. m.	ь	3	2	2012	4	2	5	4	2	71,2	
	С	6		12	I	6	3		2	2312	
8, at 4.00 p. m.	С	1	ī	6	2	6	-4		2	18	
	d	1		6	I	6	2	6	2		
10, 11.30 a. m.	d	3	I	6	3	112	1	112	2	1912	
п, 8.00 а. т.	C	2	4	$\mathbf{I}^{1}{}_2$	4	22	6	16	2	1415	
	d	2	3	112	3	22	4	22	I	$20^{1}2$	
12, 9.00 a. m.	d	2	3	22	4	23	5	23	. 2	1	
	e	3	2	22	3	23	5	23			
13, 6,00 a, m.	e	3	3	23	4	20	6	20	1		

To render the matter easier of understanding to the reader, overlooking a few errors and inconsistences in the doctor's figures which are only important because disconcerting to one studying his data, I, on this page, tabulate the results of the observations in the search for newly argument assumes that, having a choice, bees will choose larvæ young enough to produce good queens; the one I have here used that they will select larvæ that are too old. Both assume as settled the very point to be settled—the very question in debate—the very problem

that the experiment I suppose was instituted to solve. This is the kind of argument that is generally called "begging the question."

To put the matter in the direct form. there is no proof anywhere in all the data given of this experiment that the bees did not select, within five days, larvæ that were too old to produce good queens; not only that, but there is no proof that they did not do so within eighteen hours, as may be gathered from the data respecting comb b taken at the first Abstractly, the chances examination. are at least equal that they did so. Then there must be proof that the three additional cells found on comb b, just two days after unqueening, were all started within the last 31/2 of the first 22 hours after unqueening, over some of the very few larvæ still left on comb b at that time young enough to produce good queens, or the doctor's statements are again overthrown. To claim that they were so started is to assume the very thing to be proved. The overwhelming preponderance of the evidence is that they were not. But enough of this.

Since the probabilities seem to me to be so extremely favorable to the notion that at least some of the queens to emerge from the cells on comb b have been produced from larvæ that were too old at the time of selection for the production of good queens, it is worth while to inquire, if that notion is well founded, what the result to be expected is. On a careful examination of the table it will be seen that the youngest larvæ in comb b are one day and two hours older than the oldest in comb c, and that the most inferior queens to emerge from cells on comb b were produced from larvae older than any larvae on that comb selected when young enough to produce good queens; it is therefore clearly inevitable that such inferior queens will emerge before any good queens can emerge either from cells on comb b or comb c; consequently, such inferior queens would "control the situation" either in the hive or at

the head of swarms, such as I think is the natural result of leaving an unqueened colony to rear queens from brood of all ages. And this was in a case, too, where as we shall see, the older larvice were placed at a great disadvantage by the conditions of the experiment.

I have time to notice but one other point—the one just hinted at—before closing. The doctor says (Gleanings, 835) "It certainly is not proven that bees made queeniess are in such haste to rear a queen that they at once select larvæ too old for the purpose." Perhaps not. Neither is the contrary proven. Were the combs left in the super or placed below? Were other combs left in the hive with them? How strong was the colony? In what order were the experimental combs arranged? They would naturally be placed in the order of their lettering; and, as nothing is said to the contrary, we must assume that they were so placed. The doctor must know that bees have a strong preference for the central combs as the location of queen cells built to supply the place of a suddenly lost queen. They seldom in a full colony start on the outside combs of broad nor on the ones next to them if there is brood of all ages in the more central ones. If he does not know it, let him examine his own experimental combs. That it may be clearly seen I'll exhibit them in this way:

Comb a — o cells.

'' b — 5 ''

'' c — 17 ''

'' d — 8 ''

'' e — 6 ''

Notice in this case that by the doctor's data on the first examination for cells two were found on comb b, although next the outside one, which cells might have contained larvæ considerably above the proper age for the production of good queens. The central comb has almost half the entire number; and d and e have more than a and b only because chad no longer any larvæ that could be at all utilized. Suppose a had been placed in the center what would the result have been?

The doctor's experiment is very valuable; but principally because it establishes the fact that this method of queen rearing is neither desirable nor safe.

LAPEER, Mich., Dec. 1, 1899.



ONTARIO Bee-Keepers will hold their next annual meeting at Niagara Falls.

MR. LEAHY, of the Leahy Mfg. Co., of Higginsville, Mo., writes that he has completed arrangements with Mr. Heddon for the exclusive right to manufacture his hive in the United States; except what Mr. Heddon may wish to make himself.

MICHIGAN BEE-KEEPERS will meet next year at Traverse City. Geo. E. Hilton, Fremont, is President; H. K. Beecham of Williamsburg is Vice President; Wm. G. Voorheis, South Frankfort, Secretary; John M. Rankin of Agricultural College is Treasurer.

THE FOUL BROOD BILL that was introduced into the Michigan legislature last winter failed of passage from the indifference of bee-keepers. At least, this is the report given at the last Michigan State Bee-Keeper's convention by Mr. John M. Rankin of the Agricultural College.

THE AMERICAN BEE-KEEPER is using some very dainty, photographically produced initial letters for heading its articles. The Departmental headings are also of the same attractive style. I suspect that all these little finishing touches originate in the artistically inclined brain of its editor.

GLEANINGS gives some very kind notices of The American Bee Journal and the Review, accompanying them by portraits of Bro. York, the Review's compositor (Miss Nora Hutchinson) and myself. Thank you Bro. Root. As I have said before, I think that no journal ever suffers from the giving of well-deserved notices of rivals.

THE EFFECT OF BLACK UPON BEES.

Mr. W. H. Pridgen writes that before the discussion as to whether black or dark clothes irritate bees is forgotten, he wishes to state that, according to his observations, those who claim that black does not anger the bees are right; and equally correct are those who assert that when an attack is made it is usually on the darkest object or part of the object present. If a hard surface be struck, no time is lost in attempting to sting it; the effort to sting being made at the time of contact: which is almost invariably successful if a penetrable object; but, if fuzzy, it is clinched at once, and a desperate effort made to reach the vital part.

A man may be dressed in light colored clothes, with the corner of a dark hand-kerchief sticking out of his pocket, and, if the bees are angered, they will attack the handkerchief in numbers. He has seen this very thing occur.

To put the matter in a few words, he says that dark objects do not irritate bees, but when they are irritated they are more likely to attack dark objects.

HONEY DEW IN WINTER,

Mr. W. II. Pridgen writes me that late in the winter, or early in the spring, of 1875, he saw honey dew on the pines. It was so copious that it stood in drops on the boughs of all sizes of the trees; and one could not pass through a pine thicket without having his clothes soiled. The drops were as clear as crystal, and glistened in the sunlight as the branches swayed back and forth. The leaves,

straw, or shrubbery, under the trees had the appearance of having been varnished.

As near as he can recollect, it was a mild winter; the dew appearing the last of January and lasting until April or the first of May.

Not being interested in bees at the time, nor in the origin of honey dew, he took but little notice of the matter, and can not say whether it was on other evergreens than pines. While it remained there were frosts and occasional freezes.

Whether it was an exudation, a secretion of aphides, or fell from the heavens as some claimed, it was certainly there in abundance; and lasted until the weather was warm enough for bees to work on it: for some farmers thought it killed their bees, when, in reality, the "gums" were left full of honey; the bees dying out from old age for the lack of breeding room.

WISCONSIN STATE BEE-KEEPERS' ASSO-CLATION.

There will be a Joint Convention of all Wisconsin Bee-Keepers' Societies at the 16th annual meeting of the State Bee-Keepers's Association, Feb. 7 and 8, in the State Capitol, Madison, Wis.

Many prominent bee-keepers will be there and take part.

Jennie Towle, of Clark Co. and Miss Ada Pickard, of Richland Co., who alone in 1898 got 16,000 lbs. of honey from 100 colonies of bees.

- G. W. York, of Chicago, editor of American Bee Journal, will deliver an address, subject—"From the Hive to the Table."
- H. Clute, Greenwood, will show the advantages of Clark Co. for bee keeping.

Dots by the Wayside, by J. Hoffman. The Section Box for Wisconsin Honey, by J. J. Ochsner. State Inspector of Apiaries report and a lively Debate on "Spring Management of Bees," by the Vice President and Treasurer of the State Association.

The Free to All question box and answers is a prominent feature, and valuable.

There will be a big display of supplies of all kinds, several new and valuable. The American Biscuit Co. uses tons of honey in its bakings and its Watertown branch will have a full line of such bakings there on exhibit.

Excursion Rates of a fare and one third for round trip, for R. R. tickets purchased in the State, for over 50 cents each. Be sure to bring a certificate of each ticket purchased so it can be signed Feb. 8, in Madison, and entitle holder to third fare return.

The State Horticultural and State Cheesmakers' Associations will meet on the same date in the Capitol.

N. E. FRANCE, Secretary.

Platteville, Wis.

THE KIND OF CAMERA TO USE IN GET-TING PICTURES FOR MAKING HALF-TONES

Our bee-journals are becoming more and more illustrated, and it may be worth while to say a few words in regard to the best kind of photographs for use in making half-tones. I am led to say a few words from the character of some of the photographs that are sent to me. many are lacking in definition and in detail. They are not sharp and clear. In making a half-tone a great deal of the sharpness of a picture is lost. A photograph can scarcely be too sharp and clear. too strong in contrasts, for use in making a half-tone. The pictures taken by the ordinary kodak, so-called, are of little value for use in making half-tones. The greatest trouble is that there is no way of getting a sharp focus. The lens is of the kind that is called a "universal focus." which means that whether the object be near, or far away, the picture thrown on the plate or film will be passably sharp—but that is all. To do really fine work you need a camera that has an adjustable focus, so that you can throw a focusing cloth over your head, and, by observing the image thrown upon the ground glass, adjust the focus so that that particular object that you wish to show is brought out with great sharpness and distinctness. The other parts of the picture may not be so clear; in fact, may have lost in clearness, but the especial

feature that you wish to show has gained what the other parts have lost. The use of a small diaphragm, or stop, also adds to the sharpness of the picture; in fact, there are several points to be considered in getting a good sharp picture, but no amount of consideration will enable you to do the best of work unless your camera is of such a type that the focus can be properly adjusted.

WHY ARE SOME OF THE QUEENS POOR
WHEN WE SIMPLY REMOVE THE OLD
OUEEN AND LET THE BEES

CHOOSE THE LARVÆ?

Dr. Miller has made an experiment to prove or disprove that bees do not choose too old larvæ for the rearing of good queens when we simply remove the old queen and allow the bees to go on and exercise their own choice of what age of larvæ they shall use. According to his computations he proved that they did not choose too old larvæ. Mr. R. L. Taylor reviews the doctors' calculations, in this issue of the Review, and points out what he considers faulty reasoning. points out some factors that the doctor apparently overlooked; viz., the strength of the colony, the number of combs and their arrangement; and he might have added the smoothness of the combs and their age. Bee are always on the lookout for some irregularity upon which to start a queen cell; and they greatly dislike old, hard, tough, black combs. comb a year or two old seems to suit them best. While I have no idea that the doctor attempted anything of the kind, I must say that by choosing the right kind and number of combs, arranging them in a certain order, and guaging the strength of the colony to a nicety, it would be an easy matter to entirely negative the value of such an experiment as this. As Mr. Taylor points out, it is uufortunate that these factors were not considered.

Let us lay aside for the moment the question of whether Dr. Miller is correct

in the deductions that he has drawn from his experiment, and turn our attention to these facts. If bees are given larvae of all ages from which to rear queens, some of these will be almost worthless. If they are given larvæ all of one age, and that a suitable age, a/l of the queens will be good queens. If there is any one thing about queen-rearing that I know, this is one of them. I have learned it by hundreds, yes, I think I might safely say thousands, of experiments; under all conditions and at all seasons when good queens can be reared. Theory says that the bees, in their haste to replace their loss, choose too old larvæ. Theory may be wrong; but the fact, of some poor queens being produced as the result of this method of management, remains. If the doctor can give a more reasonable theory, I, for one, am willing to consider

MAMMAMAMAMAM

PHONETIC SPELLING.

In the first place I will say that I consider this an inappropriate subject for discussion in a bee journal, and if the Review discusses it, it must also receive its share of editorial disapproval. The Review allowed its columns to be used in a discussion of slang, grammar, rhetoric, etc., and while this discussion may not have been wholly devoid of good results, it also brought out the fact that a prolonged discussion of such subjects is out of place in a bee journal. It is, therefore, with a sort of inward protest, that I have allowed anything on the subject to appear in the Review; but when the other journals are discussing a subject, I have no disposition to sit like a bump on a log, and say nothing, even if I do consider the subject inappropriate-so, here

In our language there are about forty distinct sounds, and to represent them we have only twenty-six characters. It requires no great mental capacity to see that several sounds must be represented by the same character; and that wriggle, and twist, and squirm, and shorten, and

clip, and fix over, as we may, there will still be confusion worse confounded when we attempt to spell words. As I said sometime ago in the Review, when a system is radically wrong, nothing is to be gained by tinkering with minor results. I have just picked up an old copy of the Review, and counted the words in a column until I had counted 100 words. then carefully examined each word. How many words do you suppose I found that were spelled strictly phonetically? two.' You have no idea how few words there are in which there are no silent letters, and in which each letter is given its true sound-the sound that we give it, or attempt to give it, when we pronounce the letter. I will give just a few words that I look upon as spelled phonetically: be, he, me, we, pi, no, so, most, post, fort. Now, you go on and add to the list. will be astonished to see how many words you will be compelled to think of before you will find one that is spelled purely phonetically. The truth of the matter is that the spelling of a great many words is a very poor guide to their pronunciation. We simply are obliged to remember that a word is spelled thus and so because it is. It can't be otherwise, because we are lacking in letters.

We don't learn to read by spelling the words. We first learn the words and then We learn to recoglearn to spell them. nize a word by its general appearance, by "how it looks," not by spelling it over. We have become accustomed to the looks of words as they are now spelled, and to change the spelling and appearance of some of the words, unless we thereby gain some great alvantage, seems to me inadvisable. It is true that the newly proposed changes shorten up the words, but they don't spell them phonetically. They simply compel us to unlearn one unphonetic way of spelling a word and learn another unphonetic method. If by making occasional changes, as proposed by the promoters of the so-called phonetie system, we could gradually change the spelling of words until they were all spelled really and truly phonetically, I should hold up both hands in favor of the plan; but with our limited number of letters this is simply an impossibility.

If we were going to gain any real, permanent advantage, I would willingly bear the unpleasant, shocked, repugnant feelings that come over me when I come across some of these clipped, maimed and mutilated words. They arouse the same feelings that come from seeing a woman dressed in bloomers, or a man with his hair clipped tight to his head. That I am not alone in the possession of such feelings, I know by the letters I receive.

I look upon the *motizes*, of those who started this movement, as praisworthy, but to me it looks as though about the only thing accomplished is *change*. To be sure, some of the words have been shortened, but I look upon this as a small gain compared with the confusion, and the shock to the eye, that result from bringing in a different style of spelling.

There have been intimations by some of the editors that would not be influenced in this matter because some of their subscribers objected, to the extent of ordering their papers discontinued. I honor any man for standing by his principles. I also admit that an editor has a right to conduct his journal as he sees fit; but I also believe that the views of subscribers ought to be considered—if an editor does not consider them, he will be eventually without readers. There is one more point: Asking readers to vote upon a subject, after the editor has expressed his opinion, is not a very sure way of learning the wishes of the majority.

I sorrowfully admit that our spelling is something fearful to contemplate, and herculean to accomplish, and it will remain such so long as our alphabetical characters are so sadly lacking in numbers. This being true, it is better that we continue to spell as "other folks do," rather than waste our energies in attempting to make changes which, even if accomplished, would bring us no nearer the goal -phonetic spelling.

EXTRACTED.

BUILDINGS IN THE APIARY.

The Necessity of Rooms for Storage and in Which to Work

Too many bee-keepers do not look upon their business as a business. They put up with make-shifts that would disgust even an ordinary farmer; let alone one that is up-to-date. This is particularly true in regard to buildings. But I won't steal all of the thunder of my friend Harry Lathrop of Wisconsin, whose article on this subject I copy from the Wisconsin Agriculturist.

Many bee-keepers have been trying to get along with little or no outlay for buildings, while in other branches of farming they do not think of doing so. A man will build a one-hundred-dollar barn for the purpose of housing one cow and the necessary food. The cow will bring him an income above expenses of, perhaps, fifty dollars per year. A small apiary of forty or fifty colonies of bees that bring a much larger income are not provided with any special buildings, but instead, bee supplies, extra hives, combs, and honey are piled around here and there. In the kitchen, the woodshed, on the porch, and worse than all, out in the vard, exposed to all kinds of weather. The result is a whole lot of inconvenience and more or less loss and damage.

Every apiary of any size above a very few colonies should have adjoining it a building proportionate in size to the num-There should be ber of colonies kept. three rooms or compartments. One for a general work-shop, where hives and fixtures could be made or repaired; another for the storage of honey, and one which may be simply a shed for the storage of hives, lumber and all the various odds and ends that will accumulate around an But I would advise having the apiary. whole under one roof. The honey room must be sealed and arranged so it can be shut up tight in order to facilitate the fumigating of honey or extra combs with sulphur when necessary to destroy the wax moth. The shop may be made to serve the double purpose of work-shop and lumber room, but if one wishes to do work in cold weather it must be made

warm and provided with a stove. The stove must be of such size and shape that it could be used for the purpose of liquefying honey, rendering out beeswax, etc.

I have been getting along without proper buildings. One of my apiaries is sitnated on land that I do not own, and for that reason I tried to get along with a small temporary structure, but after long experience I am convinced that we lose by not providing ourselves with the proper facilities in the way of buildings. If the placing of temporary outwards is practiced, we need a good building at the home-yard, or headquarters, where every thing can be prepared ready for hauling to the out yard and where the honey and fixtures can be properly stored when brought in. If one does not wish to erect even a temporary shanty at an out-yard a small tent may be made to do duty as an extracting room, but if the yard is to be located for a term of two or three years at the same place, I would prefer a temporary building.

I have said nothing about construction. Many plans have been given in the beejournals. It is essential that we get the building large enough for our needs. It should have a stone foundation and a floor well supported to sustain a heavy weight. I would make the outside wall of drop siding and ceil with matched flooring. The rooms should be provided with bee escapes at the windows to let out any bees that were brought in with the honey.

At the home of the late B. Taylor of Forestville, Minn., I saw a honey-house made entirely of iron. This made an excellent place to store honey but is more expensive. I think my bee-keeping readers will all agree with me that we could do our work much better and with much more ease and comfort to ourselves if we were adequately provided with neat and suitable shop-room. I, for one, shall build such in the near future—if I continue in the bee business, which I think will be the case.

"LOCALITY."

And a Beautiful Pastoral in Prose and Picture.

When it comes to the use of elegant, beautiful language, none of us bee-keeping editors can surpass Bro. Hill of the American Bee-Keeper; and in the December issue he fairly outdid himself by striking off on a reminiscent strain. Then somebody over in Canada is an artist as well as a photographer, as shown by the delightful view he took of the home of John Newton, and allowed it to be reproduced in the American Bee-Keeper. As a scene of sweet, simple, rural beauty it is seldom equaled. I take pleasure in copying both prose and pictures.

Although both pictures were but recently taken, the second one, giving a glimpse of one of our apiaries on the Indian river, suggests, in the chronology of a bee-keeping career, "Twenty Years Later," and presents a view (literally and metaphorically), decidedly more shady.

It was in Oxford county, in 1885, that "John and Harry" (Mr. Newton and the writer) were drilled in rudimental beekeeping together, under Mr. J. B. Hall.



APIARY OF JOHN NE VTON, THAMESFORD, ONTARIO.

The engraving herewith shown, of Mr. Newton's home, reflects a typical Ontario scene—an ideal "summer in Upper Canada," as it was known in those "Days Gone By" of which Riley writes in his reflective muse.

The picture, with bee-hives beneath the old apple trees on the banks of the River Thames, the graveled country road, the little farm-house and broad fields of rolling land in the background, presents in a most beautiful and striking manner, to the writer, a scene of rural life in Oxford county, his boylood home. It is here that my apicultural enthusiasm was kindled, when a lad; here that all the dreams of great apicultural achievements which characterize the earlier stages of the bee-fever were fully indulged; where my ambition outgrew my resources and resolutions flourished like unto a ragweed.

It was there that we clipped our first queen; not, however, until dexterity had been acquired in taking hold of the wing with just the right movement. In this exercise the male population of the hive was made to suffer. Whether Mr. Hall, in advising this method as an initial exercise, was prompted wholly by the desire to impart to his verdant class proficiency in practical clipping, or whether it was actuated by a thought looking to the reduction of the surplus drones, is a matter now to old to question. But, be that as it may, the clipping of queens by means of a knife, instead of seissors, was there learned, and is one of the few things of which "locality" has not necessitated the unlearning, being yet in almost daily use in my work.

Mr. Newton, "like a good boy," has remained at home, and during all these years has had the satisfaction of practicing the teachings of Mr. Hall in the country where the instruction was received, and as a result of his strict application to business in a field with which he was thoroughly acquainted, has achieved success, and prominence among bee-keepers of Ontario.

On the other hand, the writer has been allured by stories of the "joyous hum of bees in midwinter," dreams of "lands of eternal springtime," "visions of floral seas" and such notions, hither and yon, spending his energy to enrich railroad companies. While "John" has been, throughout "The Circle of the Year," regularly carrying his colonies from the cellar and placing them upon the same old stand; watching for the skunk-cabbage and dandelion to "start the ball" in the spring; the apple blossoms to come and go, year

routine of preparing the exhibit for the Provincial fair at London or the Toronto Industrial, and, finally, getting back into winter quarters, "Harry" might have been seen climbing the foothills of Allegheny range to see the bees poison themselves (?) mith mountain laurel; chasing a runaway swarm among the sage brush, up and down the precipitous canyons of California; viewing the broad acres of purple alfalfa bloom in the arid West: standing aghast at the oceans of mesquite which stretches away to meet the horizon of Arizona or Old Mexico; camped in some mangrove swamp of South Florida, testing its producing capacity; or tangled in the bellflower vines of Cuba's south coast.

The following reflection may afford a fair specimen of those "terrible examples" often so highly prized by parents



APIARY OF SOUTHERN BEE COMPANY, FT. PIERCE, FLA. (PART VIEW.)

after year; building up for the great harvest annually anticipated to begin about June 10th, when the first white heads of clover peep through the fresh, green grass by the roadside; with eyes shaded from the morning sun, peering through the tops of the tall basswoods, as we used to do, to see what the indications are for a July flow, and going through the old

and Sunday school teachers, in their efforts to keep the boys at home and to impress upon them the adage, "a rolling stone gathers no moss." This is not saying that my friend Newton is a "mossback," but serves to impress the advantages gained in sticking to the field with which we may be familiar in detail. With nearly twenty years of study and practice

in bee keeping in widely different locations, involving more than 25,000 miles of travel, I may be pardoned for assuming to advise that we must learn well our locality, its peculiarities and varying resources and conditions, before we can hope to take anything like the full advantage of its capabilities. It is not less important that we should be thoroughly familiar with these, than with the natural habits of the beesthemselves; and to acquire a practical knowledge of several different localities requires no small effort. It is accomplished only by preseverance and patience—the reward of which is knowledge, for the time being-not the circulating medium of exchange so necessary to many of us. The noticeable inclination upon the part of some writers to ridicule the "locality" idea is a clear evidence of limited experience. young man who looks forward to apiculture as his life vocation would do well to receive his training in the country in which it is proposed to operate. Yet, our ability to choose wisely in the matter of a location is in proportion to the diversity of our observation and experience. Causes and effects in different localities are hardly less different in bee-keeping than are the varieties of vegetation and soil. The difference in a Canadian snowbank and a Florida "snow-bank" will be illustrated in the next number of The Bee-Keeper, showing how bees are "snowed under" in the latter country in winter.

As I leisurely wait for a turn of the tide to transport a few choice colonies of our breeding stock to our mating grounds on the island, in full view of the original of the second scene, I study with absorbing interest, the details of the picture of Mr. Newton's home, and meditate upon the performance of his regular yearly duties. It revives memories of the past-fond memories-when youthful ambition in brilliant hues painted upon the canvas of the future pictures that are revived by this study. Long years have passed since "John and Harry" comprised Mr. Hall's corps of assistants-since boyish enthusiasin gave no place to the weightier cares and responsibilities of life.

'Was e'er a man with soil so dead.''
When warmth of winter's sun is shed
on shady palm-leaves over head.
And bees by fragrant blessoms led
To bring the honey that I spread
With butter on my daily bread.
'That never to himself hath said.''
From snow-banks, thank the Lord I've fled.

If there was, patriotism had a monopoly of his being, and gratitude for the truly beautiful things of life had been crowded out and frozen to death.

NON-TERRITORIAL EXPANSION

means paying rent for a poor farm. Now is the time to secure a good farm on the line of the Chicago, Milwaukee & St. Paul Railway in Marinette County, Wisconsin, where the crops are of the best, work plenty, fine markets, excellent climate, pure soft water, land sold cheap and on long time. Why rent a farm when you can buy one for less than you pay for rent? Address C. E. Rollins, Land Agent, 161 La Salle St. Chicago, Ill.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee · Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; coml straight, of even thickness, and firmly attached to all four sides; both wood and comb misoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1,—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

KANSAS CITY.—We quote as follows: No. 1, white, 14; No. 2 white, 13; No. 1, amber, 13; dark, 12½; extracted, white, 7^{1_2} to 8; amber, 7° to 7^{1_2} ; dark, 5 to 5^{1_2} ; beeswax, 22

C. C. CLEMONS CO., Dec. 26. 423 Walnut St., Kansas City, Mo.

CHICAGO, II,I.,—We quote as follows: Fancy white, 15 to 16; No 1 white, 15 to 15; fancy amber 11 to 12; No, 1 amber, 10; fancy dark, 16; No, 1 dark, 8 to 9; white, extracted, 8 to 9; amber, 7 to 8; dark, 6; beesway, 27.

R. A. BURNETT & Co., Dec. 22. 103 So. Water St., Chicago, III.

CHICAGO, Ill -There is a good demand for all grades of honey, and we quote as follows Fancy white comb honey, 10, other grades white, 14 to 13; amber comb honey, 12 to 13; extracted in good demand 7 to 9, depending on color and package. Beeswax, 28.

Dec. 25. ST FISH & CO . 189 So Water St., Chicago, Ills

NEW YORK — stocks of comb honey are very light, and we could use some to good advantage. We quote as follows: Famey white, (5) No. 1 white (3 to 1); hancy amber, (1 to 1); No. 1 amber, (1 to 12; famey dark, (1); No. 1 dark, (5); white, extracted, \$42, lamber 7 | dark, 6, beeswax, 27 to 28

Dec. 22. HII.DRETH & SEGELKEN, 12. West Broadway, New York.

Dec. 1.

CLEVELAND, O.—We quote as follows Fancy white, 16; to 17; No. 1 white, 15; to 16; fancy No. 1 amber, 13 to 14; fancy dark, 8 to 9; white, extracted to o.

A. B. WILLIAMS & CO. Dec. 4. 80 & 82 Broadway, Cleveland, Ohio.

BUFFALO. N. Y.-There is very little new honey in the market, and the demand is very good. We quote as follows: Fancy white, 15 to 16; No. 1 white, 14 to 15; fancy amber, 13 to 14; No. 1 amber, 12 to 13: fancy dark, 11-to 12; No. 1 dark, 10 to 11; white, extracted, 8 to 9; dark, 6 to 7; beeswax, 28 to 30.

> W. C. TOWNSEND, 86 West Market St., Buffalo, N. Y.

BUFFALO, N. Y.-There is almost a honey famine in our market of fancy white comb. It is selling at 15 to 16; good to choice, 13 to 14 cents; other grades 9 to 11 cents; We have a light stock of any grade, and would be glad to hear from any one having honey that is unsold.

BATTERSON & CO. 167 & 169 Scott St., Buffalo, N. Y. Nov. 20.

NEW YORK, N. Y.—Our market never was in better condition for the sale of either comb or extracted honey. The causes for this are very light stocks and the demand more active than in previous years; probably caused partially by the general report of a short crop.

We always claim that sales made before the holidays are larger than those made afterward, as well as more profitable. Honey is selling today as follows: Fancy whit, 15 to 16; No. 1 white, 14 to 15; No. 2 white, 12 to 13; fancy amber, 12 to 13; No. 1 amber, 11 to 12; fancy mixed, 12 to 13; No. 1 mixed, 10 to 11; fancy buckwheat, 11 to 12; No. 1 buckwbeat, 9 to 10; extracted California 12; x0. 1 buckword, 9 to 10; extracted Canfornia white, 834; light amber, 84; white clover and basswood, 842; amber, 8. We are asking 7 to 74 for buckwheat, but little trade being done. Florida, and other grades of Southern, 7 to 843, according to quality. Beeswax very quiet at 2042 to 214. to 2715.

FRANCIS H. LEGGETT & CO. Nov. 21. W. Broadway, Franklin & Varick Sts

THE A. I. ROOT CO.. 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight.

If You Wish Neat, Artistic



Have it Done at the Review.

Dark:



QUEENS.

Reared by the best methods known.

Untested, single queen, 75 cts.; six for \$4.00; one dozen, \$7.50. Tested queens, just double these prices. Choice breeding queens, from \$3.00 to \$5.00. Circular telling how to introduce any kind of a queen, free.

E R. JONES.

3-98-12t

Milano, Texas

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

3-99-tf

THE IENNIE ATCHLEY CO..

Beeville, Bee Co. Texas.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.



FOR 14 CENTS

We wish to gain this year 200,000
new customers, and hence offer
1 Pkg. City Garden Beet, 10c
1 Pkg Earl'st Emerald Cucumber 15c
1 " La Crosse Market Lettuce, 15c
1 " Strawberry Melon, 15c
1 " Early Ripe Cabbage, 10c
1 " Early Ripe Cabbage, 10c
1 " Early Dinner Ouion, 10c
3 " Brilliant Flower Seeds, 15c
Worth \$1.00, for 11 ccnts. \$1.00

Above 10 Pkgs. worth \$1.00, we will

Above 10 Pkgs. worth \$1.00, we will mail you free, together with our great Catalog, telling alt about \$A11FR \$ MILION DOLLAR POTATO upon receipt of this notice & 1-1c. stamps. We invite your trade, and is know when you once try \$a12cr^7s seeds you will never do without.

200 Prizeson Salzer's 1900-rarest earliest Tomato Giant on earth. F: \$2

JOHN A. SALZER BEED CO., LA CROSSE, WIS.

1.0

Gleanings in Bee Culture.

Our New Year's Number is not behind those that have lately appeared. Among the special features will be an illustrated poem by Alice Lena Cole from the Century Magazine, also

Sub-earth Ventilation and Out-door

Wintering.

Colorado as a Bee Country.

Supplies from the Stand-point of Colorado Bee-Keepers

Superior Breeding Queens, by J. F.Mc-Intyre of California.

Tall Sections, Etc. , by J. E. Crane of Vermont.

A visit to a Cuban Apiary.

G. M. Doolittle of New York will continue, as heretofore, to give us the best from his pen on "Answers to Seasonable Questions." The illustrations will be of the same high order as in the past.

We have a few special offers to new subscribers only, and with the condition that you mention this paper when you make your order and specify number as

we indicate below:

OFFER NO. 11 ALL FOR \$1.00,

Gleanings in Bee Culture, one year
The Prairie Farmer, one year
The Poultry Keeper, one year
Regular price for all

\$1.00
.50
.50
.3.50

(If you wish we will substitute the Reliable Poultry Journal).

OFFER NO 12 ALL FOR 1,25,

Gleanings in Bee Culture, one year \$1.00 The Prairie Farmer, one year 1.00 Maple Sugar and the Sugar Bush, one

copy .30 Regular price for all 2.30

(If you wish we will substitute Winter care of Horses and Cattle.

OFFER NO. 13 ALL FOR \$2,00.

Gleanings in Bee Culture, one year \$1,00 McClure's Magazine, one year 1,00

The Prairie Farmer, one year Regular price for all

Regular price for all 3.00 (If you wish we will substitute the Cosmopolitan for McClure's Mag.)

OFFER NO. 14 ALL FOR \$2,00.

Gleanings in Bee Culture, one year \$1.00 The Prairie Farmer, one year 1.00 The A. B. C. of Bee Culture, one copy 1.20 Regular price for all 3.20

The Prairie Farmer is one of the leading agricultural weeklies of the West and gives a vast amount of reliable information, and while we are able to offer it at a low price there is nothing cheap about it. If you are not familiar with the paper, write at once to the Prairie Farmer, Chi-

cago, Illinois, for sample copy.

The Reliable Poultry Journal of Quincy, III., and the Poultry Keeper of Parkesburg, Pa., both monthlies, are leading Poultry journals, and you will make no mistake in selecting either of these. Mc Clure's Magazine and the Cosmopolitan are too well known to need any comment. Winter Care of Horses and Cattle is T. B. Terry's second book in regard to farm matters; but it is so intimately connected with his potato book that it reads almost like a sequel to it. If you only have a



horse or a cowit will surely pay you to invest in the book. It has 44 pages and four cuts. Maple Sugar and the Sugar Bush is a most valuable book to all who are interested in the products of our sugar maples. No one who makes maple sugar

or syrup should be without it; 41 pages

fully illustrated.

The A B C of Bee Culture, the only encyclopedia on bees, has already been described in this column. About 2,600 copies of the last edition have been sold since it came from the press late in September. Specimen pages of this free.

The A. I. Root Medina, Ohio.

ueens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

The Time has Arrived

for you to buy your shipping cases, those five-gallon cans, and a few hundred of the new Danz, cartons (send for sample) to harvest that crop of honey in proper shape. We can furnish you with these and all other supplies. Cash paid for beeswax. Send for catalog.

M. H. HUNT & SON. Bell Branch, Mich.

Please mention the Review.

Most talked of potato on earth! Our Catalog tells—so also about Salzer's Earliest Six Weeks' Potato. Largest farm and vegetable seed growers in U.S. Potatoes, \$1,20 and up a bbi. Send this notice and 5c. stamp for Big Catalog 92 JOHNA SALZER SEED @ LA CROSSEWIS

Did you know the WESTERN BEE KEEPER has changed hands? C. H. GORDON is now Editor and Pub.

Wanted been large or small to send 15c for four months trial,—sam-

ple copy free. 47 Good Block, Denver, Colorado.

Bee keepers should send for our

97 CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive. J. H. M COOK, 62 Cortland St., N Y, City

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Wanted Your Honey.
We will buy it, no matter where you are. Address, giving descrip-

tion and price.

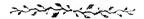
THOS. C. STANLEY & SON, Fairfield, 111s.

Now is the time for all Eastern and Southern Bee-Keepers to send in their orders for Bee-Hives and Bee-Keepers' Supplies. We have a special offer to make to all Eastern and Southern buyers. Let us know your wants and we will take pleasure in showing you that we can really rake pressure in snowing you that we can really save you money over our Eastern Competitors. The reasons are two-fold. In the first place, we are located in the lumber region of Wisconsin, and get our supply of lumber direct from the mills; whereas, our Eastern competitors are buying lumber in our State and toxing featible. mills, whereas, our Eastern competitors are buying lumber in our State and paying freight on
rough lumber, which weighs much more than
the finished product, to their Eastern factories,
and then freighting the finished product back all
over the West. In the second place, we support
to the consumer, and the only way a dealer can
make a profit off our goods is by buying the
larger quantity which is open to any purchaser,
and selling at the small quantity rate. The cost
of an article is based on the cost of material (hete
we shine), the cost of labor, and a reasonable
profit to the manufacturer. We sell our goods
on this basis, while the manufacturer who supon this basis, while the manufacturer who sup-

ports branch houses all over the United States, and some in foreign lands, must add to what we and some in foreign lands, must add to what we would consider a fair selling price, the freight charges from his factory to his supply-house; he must have interest on his investment while his goods are waiting for a purchaser; he has rent to pay every month his branch house is kept open; he has additional insurance on the goods in branch house have the work ways to be supply from the open; ne has additional insurance on the goods in branch houses; he must pay cartage from the cars to his branch house, and again back to the cars. Then the manager and clerks in the branch house must be paid. All these things tend to increase the cost of the commodity to the consumer. If prices are the same at the branch house as at the home factory, then the price at the home factory must be raised to meet these constantly increasing expenses; and the bee-keeper who takes his supply from the home factory is helping to support the branch houses in different States

We sell f. o. b cars at Hudson, with an allowance on freight for goods going east of Chicago. Buy your Bec Hives and supplies from us and you will get the goods at first cost.

Superior Stock.



Every bee-keeper who has had experience with several strains of bees knows that some are far superior to others-that there is scrub stock among bees, just as there are scrub horses, cattle, sheep and poultry. Let me give my own experience. Years ago, while living at Rogersville, I made a specialty of rearing queens for sale. Before engaging in this work I bought Italian queens and Italianized, not only my own bees, but all within three miles of my apiary. In buying those queens I think that I patronized nearly every breeder in the United States; and even in those years of inexperience. I was not long in noting the great difference in the different strains of bees. The queens from one particular breeder produced bees that delighted me They were just plain, dark, threegreatly. handed Italians, but as workers I have never seen them equaled. They seemed possessed of a steady, quiet determinati u that enabled them to lay up surplus ahead of the others. bees to handle I have never seen. It sometimes seemed as though they were too busy attending to their own business to bother with anything else. Their honey was capped with a snowy whiteness rivaling that of the blacks. In addition, to these desirable traits must be added that of wintering well. If any bees came, through the winter it was the colonies of this strain. They came as near being ideal bees as any I have possessed. All this was twenty years ago; and several times since then I have bought queens of this same breeder, and I have always tound this strain of bees possessed of those same good qualities industry, gentleness, and hardiness. In addition to this they can their honey as the backs do theirs. I have frequently corresponded with this breeder, and with those who have bought queens of him, and 1 am thoroughly convinced that he has a strain of bees that are far superior to the general run of stock - It I were starting an apiary, for the production of honey, I should unhesitatingly stock it with this strain of bees

This breeder has always advertised in a modest, quiet sort of way, nothing in proportion to what his stock would have warranted, and I have decided that I can help him, and benefit my readers, at a profit to myself, by advertising these bees in a manner befittingly energetic.

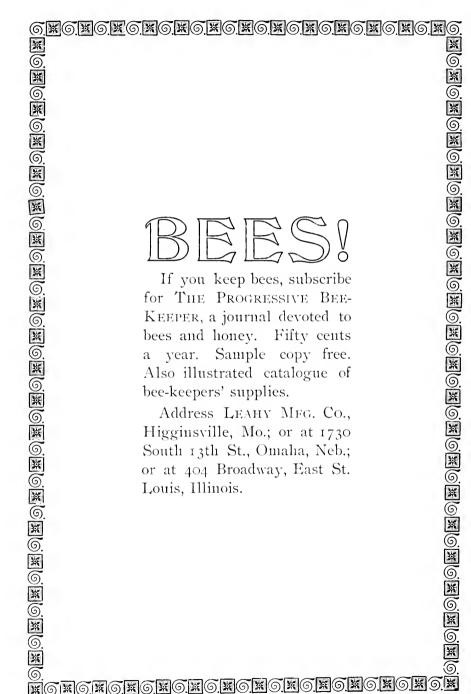
The price of these queens will be \$1.50 each. This may seem like a high price, but the man

who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem so high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen snotted prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to every purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all; if, at any time within two years, a purchaser, for any reason WHATEVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble It will be seen that the purchaser runs no risk whatever. queen does not arrive in good-condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurly mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if 1 did not know that the stock is RLALLA SUPERIOR.

I said that the price would be \$1,50 each. There is only one condition under which a queen will be sold for a less price, and that is in concetion with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$100 for the Review for 1000, can have a queen for \$100. That is, you can have the Review for 1000 and 12 back numbers and a queen for \$200. Of course, all arrearages must be paid up before this ofter will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arrearages and to pay in advance to the end of next year.

Of course it is now too late to send out queens, but they can be ordered, either alone, or in connection with a subscription to the Review, and the orders will be booked and the queens sent next string.

V/. Z. Harring r, Flint Mich



Prices Tell.

Being located where we can buy basswood bolts at a very low price, and owning a factory furnished with machinery well adapted to the manufacture of sections we are able to furnish strictly first-class, snow-white

SECTIONS,

in 5,000 lots, at \$2.15 per thousand; less than 5,000, \$2.25 per thousand. No. 2, in 5,000 lots, at \$1.50 per thousand; less than 5,000, \$1.65 per thousand. We also furnish hives, supers, shipping-cases, and all kinds of supplies. Send for catalogue.

H. RIENOW& SON.

Prairie du Chien, Wis.

Latest Improvments Perfect Goods Reasonable Prices.

Hives, shipping cases, sections, extractors, etc., everything a bee-keeper needs. Catalogue and copy of the American Bee Keeper free.

The American Bee Keeper is a live monthly and has been published by us for the past ten years—50 cts, per year.

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

Page & Lyon,

Mfg. Co.

New London, Wis.

Nearness to pine and basswood forests, the possession of a saw-mill and factory fully equiped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be utilized by the Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Densen wired. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

YARDS, RACES

Italian, 3 - Banded Italian, and Holy Lands.

We have secured our stock from the best breeders of the U.S., and now we are able to offer the best strains of the best races in America. Queen Rearing is our specialty; we have been at it for years, and this depart-ment is under the immediate supervision of our Mr. H. H. Hyde. We want the address of every bee-keeper for our queen circular which gives prices and methods of queen rearing, honey production, prevention of swarming etc. Prices, either race:—

Untested June, July, Aug. and Sept. 75 cts.; 6 for \$4.25.

All other months, \$1.00; 6 for \$5.00. Tested, June, July. Aug. and Sept., 25: 6 for \$6.75. All other months, \$1.25; 6 for \$6,75. All other \$1.50; 6 for \$8.00. Discounts for quantities.

tested and breeding queens a specialty.

O. P. HYDE & SON,

1-00-tf

Hutto, Texas.

Listen! Take my advice and buy your bee supplies of August Weiss: he has



tons and tons of the very finest

OUNDATION

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered ere. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies. Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

19



This is the original one - piece section-man who furnishes onepiece sections as follows:

500 sections, \$1.80; 1,000 for \$3.00; 3,000 for \$8.10; 5,000 for \$12.00; 10,000 for \$21.00.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK,

Watertown, Wisconsin.

WINTER

Losses are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from imperfect protection; from a cold, wet, or possibly, a poorly ventilated cellar, etc, Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult "Advanced Bee CULTURE." Five of its thirtytwo chapters treat as many diferent phases of the wintering problem.

Price of the book, 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken, either U.S. or Canadian.

W. Z. HUTCHINSON,

Flint, Mich.

Violin for Sale.

I am advertising for the well-known manufacturers of musical instruments, Jno. F. Stratton & Son. of New York, and taking my pay in musical merchandise, I have now on Stratton & Son, of New York, and taking my pay in musical merchandise, I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradiuarius." Red, French finisi, high polish, and real ebony trimmings, price \$14.90. The bow is of the finthed, rfench must, mign polish, and real ebony trimmings, price \$14.90. The bow is of the finest snakewood, ebony frog. lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and pearl dot in the end, price \$2.50. The case is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is exactly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin satisfaction to herself and teachers. Her violinhas a more powerful, rich tone than some instruments here that cost several times as much. I wish to sell this on fit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be recovered. turned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines, lowa, manufacturer of and dealer in Apiarian Supplies, Send for circular. 1-96-6

Please ment on the Peview.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind. I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saving what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Reared from imported mothers, warranted purely mated, 75 cents each. Breeders, No better stock to be had at \$t 25 each. any price. Send for catalogue of queens and bees DEANES & MINER: Ronda, N. C.

Make Your Own Hives.

Bee - Keepers

Bee ~ Keepers
Will save money by
using our Foot Pow
er Saw in making
their hives, section
and boxes.

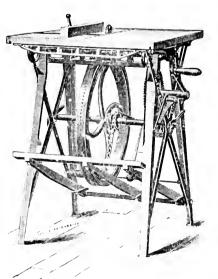
Machines on trial
Send for Catalogue.
W.F. & JKO. BARNES CO.

381 Ruby St.,
Rockford, Ills. Will save money by using our Foot Power Saw in making their hives, sections

Machines on trial.

W. F. & JNO. BARNES CO...

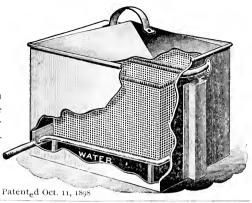




Beeswax Extractor.

The only Bees Wax Extractor in the world that will extract all the wax from old combs rapidly by steam. Send for descriptive illustrated catalogue.

> C. G. FERRIS. South Columbia, N. Y.



I have several hundred

QUEEN CAGES

of different styles and sizes, made by ('. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

Sheboygan, Wis.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We also carry a complete line of other supplies. Catalog free. R. H. SCHMIDT & CO., 9-99-tf.

Please mention the Review.

- If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

JOHN F. STRATTON'S





for Violin, Guitar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catlg

JOHN F. STRATTON.

Importer, Manufacturer and Wholesale Dealer' 811, 813, 815, 817 E. 9th St., N. Y.

Please mention the Review.

1900 Queens 1900

For Business-Queens for Strong Colonies-Queens for large surplus. Competion in Quality, but not in price.

If you want queens, nuclei or supplies at bottom prices, send for my illustrated price 12-97-tr list.

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

THE

A. I. ROOT CO.. 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

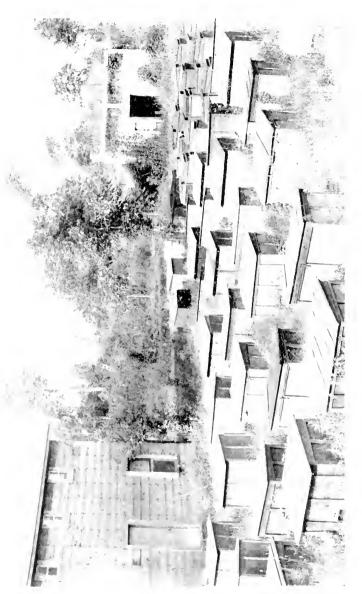
Direct steamboat and railroad lines to all doints. We want to save you freight,

If You Wish Neat, Artistic



Have it Done at the Review.





HONEY-HOUSE, APIARY, AND BEE-CELLAR OF HERBERT CLUTE, GREENWOOD, WIS.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL XII, FLINT. MICHIGAN, FEBRUARY 10, 1900. NO. 2.

PIARY, HONEY - HOUSE,
CELLAR, AND METHODS,
USED IN PRODUCING EXTRACTED HONEY. BY

HERBERT CLUTE.

My apiary is located on a side-hill. It was graded down to nearly a level, by



cutting down 3¹₂ feet on the upper side and filling in nearly as much on the lower side. This gives a gentle slant towards the outer side. I have taken some pains to make the yard attractive by planting lilac

bushes around it.—I also have some flower beds.—(Morning glories can be seen running up over the front of the bee-cellar.—Ed.)

The honey-house is 18 x 30, and two stories high. The upper story is used for storing empty barrels, chaff cushions, empty supers, combs etc. I use a Van-Allen & Williams extractor that will extract four Langstroth combs at one time. It is set about eight teet to the left of one

corner of the room, upon a bench that is twelve inches high. Between the extractor and the corner of the room is another bench two feet high that extends clear to the corner of the room. In this beuch, between the extractor and the corner of the room, is a hole cut through, and a tub set on the floor below the open-The uncapping is done on the bench, by this opening, and the cappings drop through into the tub. the same corner of the room, but extending in the other direction, is another bench, two feet high, in which there is built a sink for holding two wash-dishes and a water pail. The "strainer-barrel" into which the honey is poured stands on a bench three feet in height. By having two benches running from the same corner, the muss and work is all kept in a small compass, and by the use of a little water and a broom it is easy to keep the floor clean. Before we had this building to work in, we extracted in a little "shanty," and it was difficult to keep the floor and everything clean. The odor from the honey thus exposed would sometimes so arouse the bees that it seemed as though they would tear the whole building down in trying to get in. It aroused them to robbing. Since getting this new house, and keeping the floor and everything clean, there is no trouble from the bees. We are often able to leave the door open at times when bees would rob, and there is no trouble.

Each window has a screen of wire cloth to keep out the bees and flies, and allow the air to enter. At the top of each window is a cone of wire cloth to allow the bees to escape. These cones are made by boring a hole in a board, and pressing a piece of wire cloth into the hole by using a stick having a cone shaped end. Then, with a big spike, a hole is punched in the apex of the cone. These cones are some three inches long.

The cellar is in the hill-side. It is of the Dadant pattern. It is ten feet wide, and extends into the hill about forty-five feet, and will hold 300 colonies of bees. The walls and roof are supported by heavy oak timbers placed eighteen inches apart. There are two ventilators; and two anterooms at the entrance. The floor is level with the apiary. Even the big, double, chaff hives, some of which I have in my apiary, are put into the cellar. These are pretty heavy to handle, so I usually wait until there is a little snow, when I set them, one at a time, on a sled, and slide them in.

For carrying the combs to and from the yard I use boxes. Each box holds sixteen combs, which are just enough to fill an upper story to one of my chaff hives. One of these boxes full of empty combs is taken out and set down by the side of a hive. The cover to the hive is raised, the blanket over the combs turned back, and one or two puffs of smoke sent down among the bees. As the combs of honey are taken out, the empty ones are put in their places; thus, when the honey is all off, the bees have an empty set of combs. The box of combs full of honey is then carried in and set down by the extractor for the man in the beehouse to uncap and extract.

As a rule, what few swarms I have are hived back in the old hive. In getting a swarm to cluster where I like, I use what I call an "echoing box," It is made of

light humber, has one or more sides of wire cloth, and is attached to the end of a pole. When a swarm comes out, a few bees are taken from the front of any hive where there may be a few hanging out, and put into thus box. They are then blown upon by the breath, which causes them to set up a humming or buzzing, which attracts the swarm and often causes it to cluster upon the box. After one or two swarms have clustered there it is not difficult to induce others to do the same.

I keep a colony on a pair of scales. In 1898 the colony on the scales stored 21½ pounds in one day. The best day's work in 1899 was 14½ pounds.

GREENWOOD, Wis. July 28, 1899.



HALL WE ADOPT THE TALL SECTIONS?
BY J. H. MARTIN.

I note what Mr. Ochsuer says, on page 396 of the Review, upon tall versus square sections. The ground is well



taken that because the tall section is a new thing it is not necessary for the bee keeper to change all the fixtures in a large apiary to the new style just at the say so of some enthusiastic admirer. It is per-

haps a fact that the tall section will sell better than the square in some markets. Mr. Danzenbaker, the most enthusiastic admirer of the tall section, tells us that if the tall section is placed on sale beside the square section, that the purchaser will invariably choose the tall one, because it looks larger than the square one. You will observe that in all the accounts

of better sale and better prices that this comparison is brought up as the leading Now suppose that every beekeeper should suddenly change to the use of the tall section, and there would be none of the square sections on the market; the object of comparison being absent, would the price of honey in the tall section hold at any better figure than it does now? I think not. Then there is another point: The bee keeper with a few crates of tall-section honey may get a little better price in his home-market where he can work it off, but suppose he has a carload of various grades, will the aggregate price for the lot amount to any more than the same amount of comb houev in square sections?

Several years ago, while living in the East, I saw a nice lot of honey put up in round sections. These sections were made of material that berry coxes are made of, and they were really attractive. They looked taller and wider than the square section, and I have no doubt that there would be purchasers who would prefer this style of section. Suppose that when the tall section is well adopted some one should spring the round section upon the bee-keepers; then, when the round section was well established, some one should spring an octagon upon the bee-keepers; then where would be the end to the changes? It is well and fitting that we should have the different kinds, diversity leads to the better sale of honey, for if one style of package does not attract the eye of the purchaser, then another will. It is well to go slow in the adoption of new things. Those of us who have been in the business for a number of years have some marks upon the ends of our fingers yet where we were sadiv burned with some new fangled invention.

If I produce comb honey I shall probably use the tall section; not because I think I will like it any better than the square section, but because I use the Heddon hive; and, as everything is new in my apiary, I can use the tall section better than any other style. I work the

bees mostly for extracted honey. The same super that I use for extracting I use for the tall section. By making the section-holder with a 3% inch bottom-bar, and end pieces about an inch in thickness, the holder with four sections can be adjusted to the hive the same as the regular brood-frame, and there is no extra comb honey supers to handle; our brood-chambers and supers are all uniform. Had I a full complement of Heddon supers for comb honey in square sections I would not change for the sake of using the tall section.

Los Angeles, Calif., Dec. 29, 1899.



STABLISHING OUT - APIA RIES AND TRANSFERRING
BEES. BY H. H. HYDE.

As I am no hand to offer applogies, I am not going to offer any for coming into the Review's corps of correspondents. The subject of outapiaries is a deep one, and, although I have had a great deal of experience in that line, I fear I shall not be able to do the subject justice. At the outset I wish it understood that the views herein expressed are those of only two persons, my father (O. P. Hyde) and myself; also, as locality is such an important thing, that our views and methods might not work, in their entirety, elsewhere, without alteration.

It is not every bee-keeper who can successfully manage out-apiaries, any more than every man can be a bee-keeper. We will suppose, however, that the man contemplating starting an apiary, is fully competent to manage the same; if so, the first important consideration is the location. If possible locate where the bees can have access to timber, parairie and farms; water, also, should be at a convenient distance. As to whether trees or shade-boards should be used, will be discussed later. The out-apiaries should be as near home and as near one another as

possible, and not crowd the territory. Some localities are best suited for comb honey, and some for extracted honey, but I think that, in most localities, it will pay better to run for both comb and extracted honey. A locality where forage comes into bloom early, and continues sufficiently to keep up brood-rearing until the main harvest comes is a very favorable one.

Having selected the locality, the next thing to consider are the bees and hives. I think the best results can be obtained with nothing smaller than a ten-frame Dovetailed hive. There are a great many reasons for this view, but they will be explained later.

In starting, some may have bees to transfer, and I will here give the plan adopted and used by my father and myself in transferring over 1000 colonies.

After securing the proper tools, prepare a box the size of a box-hive to be transferred, and six to ten inches deep. ceed to the box-hive to be transferred. turn it upside down, place the transferring-box on top of the box-hive, pry open a crack near the bottom of the box-hive, smoke slowly, and drum on the hive with a hammer or stick until the queen and part of bees have passed up into the transferring-box. Remove the old hive, leaving the box of bees on the old stand, Carry the old hive a short distance away, into a room is better, and pry it open, and cut out the best combs, fitting them into frames, and filling the remaining frames with foundation. Return the hive to the old location, and dump the bees into the hive. If there is a scarcity of honey, feed until the hives are filled with combs, brood and honey. This is a modified Heddon plan; and I think will come nearer suiting every body than any other method.

Another good plan, where the apiarist is a careful man of experience, and is sure of a honey crop, is to place the new hive, filled with full sheets of foundation, over the old hive, making the connection beetight, by tacking on boards, etc. As soon

as the bees build into the new hive, and have the combs pretty well along, drum all the bees up into the new hive, and take the old box-hive away. Twenty days later drum the remaining bees into the new hive. If any queens are not prolific, or are dark, now is the best time to introduce new ones. In three or four days after the removal of the old box, if the honey flow warrants, put on supers.

Питто, Tex. Aug. 7, 1899.



EES BITING CAPPINGS—IT
MAY BE A MATTER OF LOCALITY AND STRAIN OF
BEES. BY F. GREINER.

In the November Review you criticise what I say in the American Bee-Keeper in regard to using bee-escapes after the honey-season has come to a close. I am thankful to anyone for good advice; and in this matter I think I can see the reason why I often fail in removing honey unharmed by the use of the escape. honey-season generally closes by September 1st; occasionally it lasts till the 15th of September-this late flow being caused by honey-dew. The weather after this time is cool, sometimes quite so, and we are obliged to remove the honey anyhow; although I always wait till it has warmed up during the noon hours. plaster on the propolis in great abundance during the later part of the season, and I do not find it an easy matter to pry loose a stuck-up super without a snap. I believe I am as careful in my operations as is practicable; and I would say that I do not in the least endorse the Coggshall -kick-off-method, nor practice it. Still, many supers I have taken off in past years during the later season are injured; particularly near the center, next to the escape. During the month of July supers may be pried loose much easier, and with less disturbance than during September; that, I believe, you will have to concede; and that may be the reason why you succeed better than I have done.

It occurs to me just now that there is another reason why my bees seem to act differently than yours do when an escapeboard is inserted between the hive and super.

I have reference to the behavior of different strains of bees. A bee that is easily irritated will, of necessity, act differently when a certain operation is being performed, than one that has an easier disposition. My bees are a mixture of blacks, Italians and Carniolans, and are not as amiable as one might wish.

I can conceive that the Carniolans, such as Prof. F. Benton told me about a few days ago, bees that may be handled a la Coggshall without any remonstrance on their part, will not bite holes in the cappings of their stores when treated carefully at the time of inserting the escape-board. You see, Mr. Editor, the difference between us may be one of locality and different strain of bees.

Naples, N. Y. Dec. 22, 1899.





RADING, PACKING AND SHIPPING HONEY. THE BENEFITS OF ORGANIZA-TION. BY R. C. AIKIN.

How to properly produce, grade, pack and ship comb honey, is a very live question. I start by saying, how to prop-



erly produce, because if the work is not begun and largely accomplished in the work of producing, we never can properly grade and market.

Instructions as to how to get our product in nice

shape is much discussed, both on the pages of our journals, and in our cou-

ventions; but while this is so, many do not understand as they should. many do not take the journals, and very many more do not attend conventions. Even many who do take the journals are not skilled in the science of apiculture. The fact is that this science is so new that it has scarcely gotten out of the misty, experimental stage. The strides have been very rapid the past 25 years or more, so rapid that one could scarcely keep pace with the advance. now, however, getting to something like a more firm basis, and if we could but get such knowledge as we do possess of the science, generally before the masses, the industry would flourish.

In the December issue of the Review, I find an article touching this topic, written by Mr. Mandelbanm of the S. T. Fish company of Chicago. Mr. Mandelbaum has told a lot of truth in that article, and I wish to follow it up, and help to set our apiarists right. I shall use Mr. Mandelbaum's article as a text; and, while supporting him in the main, must offer some criticisms. We want to get at the truth and weed out error, and to do so I shall discuss this topic as set forth in the heading of this article. I know that a discussion of production properly comes first, vet at the risk of getting the cart before the horse I will begin a little farther along, where the honey is found in the honey house.

It has never been my fortune to visit the great honey handling houses in the cities, nor to visit many of our large producers, but I have been a careful reader of our leading journals, and a practical apiarist for over 25 years. I have produced and sold many car loads of honey, both comb and extracted. I visited the world's fair at Chicago in 1893 and saw the honey exhibits there, and altogether I believe I know pretty nearly what the trade demands, and wherein producers fail. Those who have read my writings the past few years, know that I have lamented the way our product has been and is being put on the market. We have

not reached a general perfection in this line by a considerable.

Mr. Mandelbaum truly says there are honest and dishonest beemen, just as in other pursuits. Last fall I personally handled about three car loads of honey; beisdes being a member of a company that handled as much or more. I bought one lot of comb that looked nice through the glass, yet behind it was all sorts of stuff; crooked, partly sealed and partly filled sections. Brethren, do not boast in print or otherwise of the wonderful honesty of bee-keepers as a class; they are of same materal as other people.

I am not going to lay down here a set of grading rules; honey varies in so many particulars that it is almost impossible to live up to a fixed set of rules. The grading of honey is in a large measure a thing to be seen in order to know how to do it; and for this very reason, isolated apiarists, whether because of distance or simply because they do not stir themselves and find out, cannot properly grade. If in every producing community there was a central depot or packing house, and the apiarists could haul their honey there to be graded, they would soon learn.

There is one general rule that it seems to me should be followed by every producer who produces for the retail trade (that means every one who sells on the general market or puts honey into the hands of the grocer direct), it is the use of separators. Scrape all the rough propolis off the sections, I do not say all the stains, making the wood look neat. A planed board shows colors, it is not a rough board, plane the rough off your sections with a knife or similar tool so it is neat.

For every grade above No. 2, have every section with no honey beyond the wood, and all the honey sealed. Pack in smooth and regular cases, and have the face show the average of the whole case. As for fastening of honey to the wood, never put in a section you would not risk any of your boys to take to the store, or that you would not dare to hanl to mar-

ket in a common wagon on ordinary roads and with reasonable care. Mr. Mandelbaum says put your name on the case but never your address; but I say put on both, for then I know there will be very little dishonest grading.

I must surely criticise Mr. Mandelbaum in advocating deception of customers; selling them one thing, they having asked for and expecting another. Because the customer does not know the difference between one kind and another is no valid excuse for deceiving him. Begin to deceive and where will we draw the line and stop? The proper way is to tell your customer what you have, the reputation of the goods, and get him to try them.

Mr. Mandelbaum says pack the honey in large crates, eight cases to the crate, when shipped in less than car lots. have never taken kindly to those bulky crates, and I cannot say that I believe them the best. I favor a smaller crate that a man can pick up and carry all by himself. Two cases in one crate are sufficient, and can be so crated as to be almost invariably right to stand a shock, and less likely to be shocked. I approve the idea of crating the cases, but not so heavy and bulky. Several years ago I invented a crate which was described and illustrated in Gleanings in May 1898 page I have used such a crate and know it is a good thing and am sure it is more safe than the big, two-man affair.

I meant to say more about the name and address of the producer being on the case, and lest I forget it will say it here although a little disconnected. As I intimated above, if a bee-keeper puts both name and address on his honey, it will be almost a guarantee that he will grade honestly, that is, to be the best of his judgment, for a producer would not be so unwise as to willingly and knowingly send out under his full name and address, goods that would be a detriment to his business. I can very easily understand that the middleman would want the address left off so that he might substitute

as Mr. Mandelbaum has already told us; and, also, that he might keep the goods coming his way, which he did *not* tell us. A retailer has a right to order direct from the producer if he sees fit, and a producer has a right to the reputation his product gairs.

It is likely there would be but a small proportion of producers get orders direct from the retailer, for the difference between local and car load freights would make a large percent of the difference. so that there would be little or no saving; vet, if I produce a fine and trustworthy article, and a retailer finds my name and address on my goods, many times I would get orders direct, even though the cost to the retailer was greater. Both the retailer and the consumer have a right to know where their goods come from, and the producer has a right to make his product known. I also refer von to "Armor advertising his articles; Pabst his malt; and Pearline;" and I say to the brethren, my fellow producers, advertise your honey.

Mr. Mandelbaum takes sides decidedly in favor of paving spot cash for honey. Amen. Amen. Amen. Stick to that friend Mandelbaum, and peg away until the rest have to do the same. never "consigned" more than one or two little lots of honey; and, more, I never intend to. Money was made as a medium of exchange; and let's use it. Thousands of commission houses that are worth their thousands are asking poor producers with hundreds or less to furnish them additional capital on which to do business -a shame and a disgrace. No wonder some producers disregard moral obligatious. I can say this: The house Mr. Mandelbaum represents bought much honey in Colorado last year that could not have been bought except for spot cash. Yes, I am glad so strong a house as the S. T. Fish company has set the pace inaugurating the cash basis.

Some may say that I am inconsistent, because 1 am interested in a company that handles honey on commission. I am

a producer, and, with other producers, have joined ourselves together into a cooperative stock company, and honey sold by our company pays its commission to defray expenses. Surplus over expenses is the property of those paying it in, and it goes back to them. This company is an association operating for mutual benefit and the benefit of all producers, but to be a lawful concern is incorporated under the laws of the State. I refer to it because of the fact that in Mr. Mandelbaum's article he speaks of having bought much honey in Colorado, and also of having some trouble with an association which did not live up to its contracts. glad to say to the readers of the Review that the association referred to by Mr. Mandelbaum was not the Colorado one.

I want to call the attention of Mr. Mandelbaum to one part of his article that does a grave injustice to Colorado apiarists. It is this: Just at the close of page 365, beginning of last paragraph, is the following: "This was a year in Colorado's favor, for it had a crop, while many localities were without. We found some cases of comb honey that had moths, candied combs, partly filled combs, and interwoven combs," etc. Now, it would not be strange if some candied honey were found in Colorado stock, for some of our honey does candy freely; but if Mr. Mandelbaum can tell us where the wax moth is found in Colorado I would be thankful. I am pretty familiar with the part of the State from which they bought honey the past fall, and I never heard of the bee moth in it. At our conventions many have asked about the moth, and it is a fact that I have never found moths here, nor any apiarist that even knows the moth, unless having made its acquaintance elsewhere. Combs can stand any where here for years and never a wax moth.

Now my objection to the quotation which I have to make, is that it will be interpreted by 99 out of every 100 readers to mean that it was Colorado honey that had the moths in it, when

we do not have the insect here at all. Knowing this, I must infer that there has been a mistake, and that the honey that was so objectionable did not come from Colorado. I hope that Mr. Mandelbaum did not intentionally do the bee-keepers here an injustice; but to let that statement stand as it appeared, certainly does reflect, and injustly, upon our apiarists, and they feel the injustice, too. I am sure Mr. A. P. Lee, the man who bought the honey hereabouts, will say that he saw no evidence of the wax moth while he was among us.

I must urge upon bee-keepers the necessity of organization. Why should every thing else be organized and we not? Organize into some kind of a mutual concern and take care of your own products. not make a great big company that shall come together as a body; and 25, 50, or 75 producers in convention try to do the business of the whole concern: but band together and select your best business men. a few of them, to do the business for the rest, and pay them for doing it. directors or managers can keep posted about supply and demand, and can hold up prices to somewhere near where they ought to be.

Take as an illustration what Mr. Mandelbaum tells us in his article. He tells us that had his firm "been agents for the honey producers, we would have held every pound of their extracted at 10 cents, at producing points, because we knew of the shortage and requirements of the trade, but much of the honey was sold at producing points at 6 cents per lb." etc. His firm knew the honey ought to bring 10 cents, yet paid 6 cents and wanted it for less.

Now, proper organization and business methods would bring to the notice of producers many things they cannot otherwise know, and can very easily advance the price 10 to 20 per cent. Why should buyers go about among producers and offer five cents for honey that is worth much more, and because they can buy from my neighbor at that, use it for a

lever to pull me to the same price? Just such things are done, and will continue to be done, until we organize and post ourselves. I know of a good many beekeepers that, because of organization and co-operating, stiffened up the price so that they received more than enough to pay for the expense of their organization, over and above what they would have received had they sold independently.

Organization means that we shall better understand each other, grade better, pack and market, and improve in all the details of the business. It is better for the producer because it will put our pursuit on a better business basis; and better for the buyer or middle man because there is more system and regularity in what he gets from us. Through organization and system in preparing for and placing upon the market our product, is imperative; and we owe it to ourselves and patrons to accomplish it. We are charged with very unbusiness like ways, and we are guilty. By business I do not mean the sharp questionable methods practiced by many, as taking advantage of the weak or ignorant, but straightfoward, fair and honorable methods of attaining a high and efficient system in our operations.

LOVELAND, Colo., Jan. 30, 1900.





OMMENTS ON MR. MAN-DELBAUM'S ARTICLE IN DECEMBER REVIEW. BY

W. A. H. GILSTRAP.

It appears to me, as a honey producer, that Mr. Mandelbaum's article in the December Review has some splendid points; also some that should not pass without challenge.

Various phases of the honey business look one way to Mr. Mandelbaum, and, of necessity, another way to me. He buys large amounts to sell again. I produce small amounts to sell—but little over 18 tons in my best year. The most de-

lightful work for me is to rear queens and produce honey—and sell the honey. No piano ever made as sweet music to my ears as does the hum of bees.

Yes, many bee-keepers are dishonest. I truly believe that most of the men in any occupation stay with a deal only when selfish motives dictate.

Every season there is more or less honey dew along the San Joaquin River. Strange as it may seem, bees store the vile stuff in their hives. There is a class of customers who desire it: at a reduced price, of course. Some honey, largely of this class, I consigned to Messrs. W. G. Lowry & Co., San Francisco, at 41/2 cents Very likely I could not per pound. have sold it so well; but they know the trade; and, so far as I can learn, are strictly honest and capable. Of course, to buy it outright they would buy at the lowest price they could, to compete with others who do the same. The honey dealer is of necessity a bull and a bear. It just depends whether he is driving a purchase or a sale. Competition reduces the profits that would otherwise accrue to the dealer. When dealers unite we call it a trust. and wonder how they will regulate the laws of supply and demand; for the forces of Nature are set at naught, or almost so, by such men. When bee-keepers unite for the same purpose we call it an E.rchange.

If light honey comes in rapidly, my advice is to put much of it in the sections; everything packed in good shape. Slow flow and dark honey should always be extracted. Honey may contain much honey dew, yet the San Francisco trade handles it very satisfactorily under the name of "tule honey." A wholesale dealer in Fresno told me he would give more for honey with "a strong bee taste," because it could stand more glucose, and still pass for honey. He says he sells to Eastern dealers, and they all "mix."

Perhaps the strangest part of Mr. Mandelbaum's article is where he wants the cases marked so as to protect *him*, and yet allow him to sell alfalfa and basswood for white clover. I don't know what you call that. One point farther: If he sells a case marked "J. F. McIntyre" the purchaser can not tell who to send to for more, except to send to S. T. Fish & Co. But, suppose the case is marked, "J. F. McIntyre, Sespe, Calif.," the customer may send to California for his next honey, and S. T. Fish & Co. have lost a customer.

"The gross, tare and net should be on the case." For comb honey that is probably the best. Pass this rule along. When a strong house takes a stand for actual tare, tell other honey producers about it; tell dealers about it who insist on "estimating" you out of your honey; tell them and make them hear. testimony from Eastern houses has been so persistently handled in central California that "estimated robbery" is now in its death struggles here. Some San Francisco houses now recommend actual tare. With extracted we usually put 60 lbs. in each can and mark the case "120 lbs. net."

In the last paragraph he touches a very important point when he refers to Congress eliminating adulteration. Several have stated that Congress can not forbid adulteration; only prohibit its transportation between the States. So far as I can learn, the statement was first made by Mr. Abbott; who ought to be posted on the subject. The "general welfare clause" of the Constitution surely would permit of such legislature; providing there is not some modifying court decision or law that has not come to my notice.

GRAYSON, Calif., Jan. 5, 1900.



PROTEST; AND A DEFENCE OF THE COLORADO HON-EY PRODUCERS' ASSOCIA-TION. BY FRANK RAUCH-

FUSS.

In the December number of the Review appeared an ambiguous article by M. H. Mandelbaum, which will be understood by the average reader as affecting the reputation of Colorado bee-keepers and their product. An association was also referred to; and, as the association I represent is the only honey marketing organization in Colorado which has sold any honey to S. T. Fish & Co. during the past season, I have been instructed by its board of directors to present a brief account of those dealings.

The Colorado Honey Producers Association sold, during the past season, two carloads of comb honey to S. T. Fish & Co.; all being of first quality, except 126, which was second grade and sold as such. Every case of our honey was plainty marked, either with stencil, or otherwise, so it could be readily identified, and a bill accompanied each car giving the number of cases, and the markings and weights of each separate lot. The firm's buyer, Mr. Lee, examined each lot of honey in our store at Denver before accepting it. has expressed himself at different places that the honey he bought of our association was very fine, and we have so far not received one word of complaint from said firm. The loading of our honey, as well as the bracing, was not done by carpenters, but by members of our association, and at our own expense.

The claim of Colorado honey being infested with moths, is amusing; as there are no wax moths in existence in this State.

We believe we have good reasons to be proud of our Colorado Alfalfa honey, and, therefore, we don't relish the idea of having it palmed off as white clover honey, basswood honey, or what else (see page 364, second column); we therefore not only want our names on the cases, but also the addresses, so that people will know where the honey has been produced. We recognize that this is the only way to establish a reputation for our product.

DENVER, Col. Jan. 12, 1900.

MPROVEMENT IN BEES—SOME OF THE FIRST STEPS TO BE TAKEN. BY L. A. ASPINWALL.

In the December Review, Mr. J. E. Crane touches a responsive chord in my field of progressive bee culture. I



have been working steadily the past six years to improve my stock of Italian bees; and, although having believed a decade would show but little improvement, I find, however, some progress has been made.

Most bee-keepers know how absconding swarms are frequently attracted by the busy hum of an aggregation of colonies, causing them to discontinue their I have had several flight and cluster. such become citizens with my bees. While the majority have been brown bees, and seemingly quite small, the past season brought me a swarm of pure Italians, which are exceedingly gentle. At first supposing them to have issued from one of my colonies, I caged the queen, hoping they would return to the parent colony. To my surprise they proved to be an absconding swarm; no attempt being made to enter any of the hives. what impressed me most, was the comparative difference in size between those bees and mine; and, although I realized that a slight improvement had been made by careful selection and breeding, I now know it is greater than I first supposed.

For the benefit of all interested I will state my method of procedure. As friend Crane remarked, queens having a pedigree are the least subject to atavism, or recurrence to an ancestral type; so those colonies having made the best record for a succession of years, were selected to breed from. However, many

characteristics were taken into consideration.

But, before undertaking the work, an effort to eliminate all undesirable traits was attempted. This special work I consider the first step requisite to rapid and permanent improvement.

Let us note some of the undesirable traits to be eliminated. Possibly I may be rather particular in my desire to weed out; but thoroughness in all things is the key to success. So I began by superseding the queens of all colonies having a vindictive disposition, supplanting them with others reared from my best tempered colonies. In this selection I have also been careful to avoid other undesirable traits; among which is the tendency to build an excessive amount of I have found this latter burr-combs. type to concentrate their efforts, instead of expanding in securing the largest vield of comb honey; to say nothing of the objectional trait, necessitating frequent scraping of the top-bars and super bottoms. So this necessitated the supersedure of queens in all such colonies.

Then, again, most bee-keepers have noticed that some colonies are less prolific than others—notably so for generations. I here speak of colonies, believing the queens are not altogether at fault. As strong colonies, other things being equal, store the greatest amount of honey, it is evident that the unprolific queens should be superseded.

With chronic unprolifieness, bad temper, and the burr-comb tendency eliminated, we now begin to improve our stock by selecting the best honey gathering colonies, which must contain, not only the largest workers, but queens and drones, all having good and uniform markings. Here, demands are forthcoming for the restrictive breeding of inferior drones, they bring the greatest impediment to the successful breeding of improved stock. Parenthetically, let me say, that artificial comb would be a great factor in the improvement of bees. It

would allow the production of drones from desirable colonies only.

Speaking of queens, I am aware that many of our successful queen breeders contend that small queens are fully equal to those which are larger. Still, if size of the workers is to be increased, parentage will sustain the law of heredity.

Under no circumstances do 1 retain a small or dark queen; believing, as 1 do, that the Italian variety of bees are but—thoroughbreds. Since the first importation of them into this country, 1 have found the queens far from being uniform in color. Distinct varieties in nature are alike in color and markings.

The drones, having no sire, are the best test of the progeny of large queens. Those who decide that the progeny of small queens is equal to that of large ones, have possibly been looking at the business end, the workers. they have a sire, and partake of characteristics from both sides, consequently, maintain a fair average. So thoroughly am I convinced of this, that in my best efforts, the drones receive a share of attention. Having one queen which produces extra large drones, I have requeened nearly one-fourth of my colonies from her daughters; most of them producing fine workers and drones.

All efforts to improve our stock of bees should be eelectic—we should follow every possible lead. Queens reared very early in the season, or previous to the drone period, I have generally found inferior; while those reared in September have proved my very best. The limited period of egg-laying which follows late impregnation, undoubtedly tends to conserve their vitality for another season.

The promiscuous breeling of drones is doubtless unfavorable to the production of improved stock. It tends to a general mixing instead of developing desirable characteristics. The principle object of requeening one-fourth of my colonies from daughters of the queen producing large drones, was to aid in preventing the promiscuous breeding of them,

With artificial comb, an elimination of them in all but the one colony would, in my judgment, be the best course to pursue. However, by limiting their production, except in their choicest colonies, a steady gain may be expected.

Referring to desirable characteristics, I made no mention of hardiness, or the ability to withstand severe winters, having no difficulty in wintering my bees.

What I most desire is an improvement in size of the workers, queens and drones, together with honey gathering qualities. Any improvemement in size must necessarily be slow; unless we allow new combs to be constructed every season by the improved bees. Although having made slight progress in this respect as already stated, also in honey gathering qualities, still, using the old combs year after year, must tend to keep them dwarfed.

JACKSON, Mich. Jan. 24, 1900.



IZE OF HIVES AND THEIR
PROPER MANAGEMENT IN
PRODUCING COMB HONEY.
BY L. STACHELHAUSEN.

In the hive-question the discussion is stopped. I think myself that nothing



new would come out of further discussion; nevertheless, I am not convinced that your opinion is right. If you say it is no difference, whether the same number of bees is in one hive or in two, this is against all practical experi-

ence. I know, that a colony of 20,000 bees may store no surplus honey at all;

one of 30,000 may store 20 lbs. and one of 60,000 not only stores 40 lbs., but 120 lbs., may be more. This is my and many other bee-keepers' experience. Old rule:

—Get your single colonies as strong as possible for the main honey flow.

It is against the theory of the useless consumers to keep more and weaker colonies. I want my colonies just strong enough to secure their existence from the time after the honey flow till early spring, not stronger, as yours are; and we get this, if the queen is worked to her fullest capacity from early spring till to the honey flow. The queen overworked, as you say, does not lay so many eggs during the honey-flow as before. This is the reason why I said that in small hives will be more brood comparatively, when we do not need it. Rule:-Get as many bees for the honey-harvest as possible and as few as possible when they are consumers only.

But I understand your position as a comb-honey-man very well. You and many other bee-keepers know, by practical experience, that you get more honey from small hives, but the question is why? When the honey-flow commences the large brood-nest will be in such a condition that the bees will hardly work in the sections at all. You want the broodnest full of brood during the honey-flow, so the honey is forced into the sections. but an overworked queen may not fill even a contracted brood-nest. all true, and the production of comb-honev will be unprofitable, so much so that years ago I quit it entirely. You overcome this difficulty by using small brood chambers in the spring, but hereby renounce a full development of the colony, and raise more useless consumers, as Doolittle puts it.

The problem is, to use a hive and management, by which a single colony is developed to the most possible strength before the honey-harvest, and then to bring it into a condition which forces the bees to work in the sections at once. Since I do this I can get nearly as much comb-

honey as extracted by using a large broodnest in the spring. The whole thing is quite simple. I use your method, which you published in a little book years ago, but I do not wait for the swarms; I make them artificially when it is time to set the sections on the hives. These colonies always work like a natural swarm. If we wish, we can use Heddon's method to prevent after-swarms, and draw all the young bees from the brood-combs to the swarm. I could tell a lot of advantages of this method.

CONVERSE, Texas, Dec. 5, 1899.



CONDUCTED BY R. L. TAYLOR.

The best critics are they Who, with what they gainsay, Offer another and better way.

IMPROPER APPLICATION OF THE LAW OF

"THE SURVIVAL OF THE FITTEST."

In Gleanings, 829, Mr. A. J. Wright explains his method of preventing afterswarms. About the time the cells are to hatch, he puts a guard of perforated zinc to the entrance of the hive, and leaves it a few days until the cells are all hatched or destroyed and all young queens killed but one. He says: "I now remove the zinc and have the best queen of the lot, on the plan of the survival of the fittest." The idea of thus securing the survival of the fittest is one not seldom met with in apicultural writings. I am at a loss, however, to understand how the principle applies; or, at least, I feel an impulse to inquire: The fittest for what? It would bring some of our troubles to a happy conclusion if the answer might truthfully be: The fittest to produce workers destined to beat all others as honey producers. We might then, with a good conscience, bid adien to the measuring of the length of bees' tongues, and to testing the appearance and amount of a colony's product, with the hope of thus discovering a queen of great excellence as a breeder. But it is difficult to perceive the relation between fighting qualities and length of tongue, or prolonged activity in the field. Who ever heard of any one resorting to cock-fighting for the selection of sires from which to breed a good strain of laying fowls, or of choosing sires among horned-cattle on account of their fighting qualities, for the establishment either of a beef or dairy breed? This, nevertheless, would seem a rather wise thing to do, as compared with the selection of queen bees by appealing to the wager of battle, since in the latter case there are few queens that are not destroyed, not on account of any deficiency in fighting qualities, per se, but owing to their comparative immaturity. In other words, there is not a fair fight. Queen bees, it is well known, emerge from their cells in succession largely; so that, when the desire for further swarming is given up and the workers exercise no restraint to the emerging of the queens, all others fall on easy prey, as a rule, to the one first out; and that not at all because the latter is in any respect a better queen but solely because she is more mature; and, therefore, stronger and more active,

SOME CRITICISMS ON ADVICE REGARDING

A MALADY THAT MAY BE CONFOUND-

ED WITH FOUL BROOD,

Editor Root, (Gleanings, 858,) after discussing the matter at some length, arrives at the conclusion that there are two kinds of foul brood. The facts from which he deduces reasons leading to his conclusion are that samples "of badly affected brood" from New York, where a new affection of brood has made its appearance, have a malady that differs from that with which he has been acquainted,

and that a "great many" have reported that salicylic acid and phenol would cure foul brood, which seems proof to him that the disease was a different one from that which attacked his own bees, since he found drugs worse than useless. one of the "great many" he says: "For instance, C. F. Muth found that he could very readily handle the foul brood, or what he suppossed to be that disease, in his locality, years ago, by spraying the combs with a solution of salicylic acid." And he infers that: "The morale [moral?] of this thing seems to be that there are two kinds of foul brood, so-called, in the United States; or, at least, there have Scientifically speaking, there cannot well be two foul brood diseases. and it appears to me to be unwise to treat the matter as though there might be. So far as I have learned, no one has yet pronounced the disease which has appeared in New York to be foul brood, and, as to the reports of the "great many" referred to, wouldn't it be well to take them with a grain of salt? We know many have been mistaken as to the effects of drugs on foul brood. Mr. Muth himself was greivously mistaken, for he told me personally, at Keokuk, I think it was, that he had found that salicylic acid would not accomplish in the case of foul brood what he at first supposed it didthat it would not cure the disease. Robertson, a few years a noted bee-keeper in central Michigan, sent me, at one time, a formula for the compounding of a sure cure for foul brood. Salicylic acid was the vital ingredient. It had cured foul brood for him, he said, without the distruction of a comb. I tried it faithfully, and failed utterly. later that Mr. Robertson lost all his bees Editor Simafterward by foul brood. mins, reported in the American Bee Journal, 764, is undoubtedly another of the "great many." He cures foul brood without destroying combs, by simply letting the diseased colony during a honey flow "when fairly numerous" rear a virgin queen; when the bees will clean "out every vestige of the disease before the voung queen again made up a broodnest." He has never known it to fail! Even the editor of Gleanings (Gleanings, 878,), I trust in his haste, thinks it would be a sure cure—he of all others, who heretofore would have foul-broody honey boiled three hours before feeding it back, and generally would burn combs and all, now holds, practically, that it would be safe to give them back unheated foul broody honey, combs, dead brood and all, if only the colony be not badly depopulated, and is compelled to rear a queen before renewing brood-rearing, and and during a honey flow for he says of the plan: "There is no reason why it should not work, as it is almost what is called the starvation plan of cure." Tell it to the marines. To any one who has has had experience with foul brood it is utterly ridiculous. Are we to make no advance? Others are yet to be tried with foul brood for the first time. Is it necessary to delude them into threading all the weary way their predecessors have trod? If a new disease has appeared, let it be known for what it is, and let it be treated as its character requires, but let us not confound the novice by confounding it, even in name, with foul brood.

SUPPOSITIONS OF SMALL VALUE.

I pointed out some time since that an experiment, reported in Gleanings, in which an effort was made to determine the quality of the new process foundation by comparing it in the hive with a like quantity of the old process, was without point and valueless, because the quality of the old process foundation with which the new was compared was not known in any particular. Stenog. (Gleanings, 879) attempts to make light of my position in the matter and supposes that the old foundation "was as good as could be had." I suppose the experimenter supposed so, too, and the chief difficulty is that suppositions are not facts. Reasoning founded on suppositions cannot give results that are any better than suppositions, and we can have them plentifully without the trouble of reasoning. At last, as if to overwhelm me utterly with ridicule, Stenog, doles out a flat and impertinent jest. I would not have referred to this matter again were it not for the importance of a serious consideration of weighty things in apiculture. If the whole affair is only a joke, and it is as well to decide a point wrongly as rightly, let us drop the pretence that we are writing and printing to help one another to success in bee-keeping.

GATHERING GRAPES WHEN BEES ARE ON THE BUNCHES.

bee-grape question, Hasty (American Bee

Journal, 711) gently apologizing for the

Referring to Dadant's discussion of the

grape-man, and suggesting that it is best for the bee-man not to claim too much. says: "It is beyond denial that when a man not inured to stings wants to pick grapes it is a miserable nuisance to have the bunches covered with bees. * * * What does he care—the man with one eve closed, and hands swollen too stiff for service—whether (theoretically) bees can puncture grapes or not?" I judge there is danger of granting too much as well as claiming too much. To a man without any experience or knowledge of bees it may be something of a nuisance to have the bunches covered with bees. but when he learns the harmlessness of the bees under such circumstances and the advantage the bees are in cleaning up the juices of the grapes, broken either by the birds or by natural bursting, he will welcome them to his grapes I, at least, am glad of the help of the bees in gathering up the juice so that it may not aid in hastening the bursting of the sound grapes adjacent, and only regret that they can not gather it more quickly. Very few grapes are visited on any other account than by reason of the two kinds of rupture I have just referred to; and this I am satisfied any one may verify by cultivating a small variety of grapes, including some red grapes of high quality, which the birds like, such as the Brighton, Ulster and Lindley, and some that are liable to burst from natural causes, such as, the Worden, Delaware and Duchess, and some that neither burst nor are attacked by the birds, such as the Niagara and the Eumelan. With such a list of grapes in bearing, with plenty of bees in the neighborhood, any one with an unprejudiced mind of an inquiring turn may quickly discover, with a little observation, that bees never puncture grapes. And, as to closed eyes and swollen hands, Hasty knows, of course, that that would be entirely impossible unless one set out with a set determination to make the bees sting him, and that even to the extent of holding them to his face. Away from home, bees do not volunteer to sting. have gathered tons of grapes when visited by bees for the reasons stated, and I can not recollect that I ever received a single sting while thus engaged. I am quite certain that I never did. I should perhaps add that if one, in gathering grapes, handles them carelessly so that some are broken or torn from their peduncles the bees will visit them in the basket.

WHAT DEGREE OF WINTER-SEVERITY CALLS FOR CELLAR-WINTERING

OF BEES?

In reply to a question in Beginner's Ouestion Box (Gleanings, 804) E. R. Root says: "I would not try to winter indoors or in the cellar unless the temperature outside ranges near the zero mark for six or eight weeks at a time," This strikes me as a most remarkable statement. Two weeks of such weather at a time would be sufficient to stamp a winter as a hard one, even up here in Michigan, and vet many of us find it advisable to winter our bees inside. On referring to the latest State Meteorological report I find the longest period during the year 1898 when the temperature ranged near the zero-mark was five days, during which the daily mean ranged from -5^23° to $+11^23^\circ$. If Mr. Root's advice were generally received

and acted upon it would drive cellar wintering far into the Northwest. Mr. Root makes the further assertion that: "When the temperature out doors is above freezing it is very difficult to keep the bees inside quiet." Whether that is true or not depends, of course, largely on the character of the cellar containing them. Though the temperature here has been above the freezing point outside a good share of the time since I put my bees into the cellar in November, I have had no difficulty at all-not so much as to cause me to open a door to let in cool night air -a thing which I may find it expedient to do as the time for taking the bees out of the cellar draws near. A cellar to be desirable must be so protected from outside changes of temperature by being put deep enough into the earth so as not to be easily effected by them.

AMOUNT OF SUPERANNUATED BEES THAT DIE IN WINTER.

Upon the same page Mr. Root, in answer to another question, says: "With the best winter repository that has ever been constructed bees will fly out on the floor and die, and, if they are not swept up, 75 or 100 colonies in a cellar 10 x 10 may furnish dead bees before spring sufficient to cover the floor an inch or two in depth. These are probably the superannuated bees." Look at it from whatever point of view I may I am at a loss to account for the making of such a statement. I fear it may be, to many, a cry of safety, when there is no safety. A little calculation will show that one inch in depth on the space specified would amount to somewhere in the neighborhood of 209 quarts, and two inches to about 418 quarts; so that Mr. Root's statement is equivalent to saying that colonies of bees in a cellar may lose anywhere from 21/2 to 5 quarts of superannuated bees a colony during the winter. It would require, one would think, pretty active winter breeding to replace so much loss. But I prefer to suppose the facts have been exaggerated. In my own cellar the dead bees

seldom come anywhere near covering the floor from sight, and about a pint to the colony would be a fair average loss. The only winter in which the dead bees approached an inch in depth, I lost a large percentage of my colonies; and what were left were not of much value.

LAPEER, Mich., Jan. 30, 1900.



THE CANADIAN BEE JOURNAL comes out with new type, new paper and a new cover. Our bee journals are becoming a delight tpographically.

DANIEL WURTH, formerly of Falmouth, Ind., has moved to Merigold, Miss., taking with him So colonies of Golden Italian bees, which he will use the coming season in the rearing of queens.

H. RIENOW & SON, of Praire du Chien, Wis., write that their advertisement in the December Review was a good thing for them. It has brought lots of correspondence; and some orders are coming in as a result. They say that if they get orders from half of those with whom they are in correspondence, they will be obliged to run their little factory night and day.

Home-Made Buzz-Saws can often be made to do excellent work. I have seen several, including two that I made myself, that did about as good work as any foot power saw could do. Mr.C. H. Pierce, of Wisconsin, describes, in Gleanings, the manner in which he rigged up an old bicycle so that it could be used in running a saw. The back wheel is used for a band-wheel and gives the saw a speed of about 3500 revolutions a minute.

HARRY LATHROP, of Wisconsin, will tell the readers of the Review, next month, how he produces extracted honey with eight-frame hives; and I will give a view of his home-apiary—the very picture of comfort and neatness.

O. I. HERSHISER, an old-time competitor of mine at fairs, who is a well known lawyer and bee-keeper of Buffalo, N. Y., has chosen one of Canada's fair daughters as a bride—Miss Margaret Jane Mc-Intosh, of Toronto. May they receive their full share of life's nectar.

Non-Swarmers still prove a success with Mr. Aspinwall of Jackson, Michigan. He writes that a pressure of other work prevented him from giving his apiary the attention that it ought to have had last summer, yet there were only two swarms out of fifty-four colonies. He says these might have been prevented if he had given them the proper attention. Not only this, but he secured a small crop of honey, and the approach of winter found his hives well supplied with stores, while his neighbors got no honey whatever.

MR. T. F. BINGHAM, of Farwell, Michigan, writes me that he has discovered that bees are quiet and contented in an atmosphere having a temperature of 50°, but so lacking in oxygen that it will not support combustion. A lantern in it will not burn one second. That the amount of oxygen needed by bees in winter is certainly very small, has been proven repeatedly. All the bees that I now own are buried under three feet of earth with no ventilation except what filters through the earth.

COLORADO AS A BEE-COUNTRY.

Colorado is now one of the foremost States in the production of honey. So rapidly has it come to the front that many are the longing eyes cast in that direction. Mr. Root, editor of Gleanings, was out there lately in attendance at the Colorado State convention, and he gives a word of caution to those who may be thinking of pulling up stakes and starting for this Western eldorado. He says that the good localities are already overstocked. There are certain portions of the State, now barren deserts, that would become veritable garden spots if some way could be discovered of elevating water several hundred feet.

FIVE DOLLARS FOR AN ARTICLE.

For the best article received before March 31, for publication in the April Review, I will pay \$5.00 in cash. For each article, aside from the prize-article, that is accepted, I will advance the writer's subscription to the Review one year and send him, next summer, a Superior Stock queen.

Please use black ink, on good, white paper, and write on only one side of the paper.

The style in which the article is written, and its length, will have little influence in the making of the award. What is wanted is such information as will aid a bee-keeper in making of his business a more safe, pleasant and profitable pursuit; in other words, preference will be given to practical articles, that is, those that tell "how to do things."

DR. MASON'S DEPARTMENT OF "GOOD THINGS FROM OTHER JOURNALS"

TO BE DISCONTINUED.

In its ambitious way, the Review has started too many departments. The number of departments was increased until there was not room for satisfactory work in any of them. "Notes from Foreign Bee Journals" has been crowded out for several months. This month I find there is no room for "Good Things from Other Journals;" and the more I think about it, the more I believe it better be left out all of the time. It is really a counterpart of the Extracted Department, except that it reflects the views of another man instead

of those of the editor. In dropping these two departments there is no reflection whatever upon the men who so ably conducted them. I simply made the mistake of introducing too many departments; and, now that I see my mistake, I am rectifying it in the only way possible.

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THE TROUBLE WITH THE BEES IN NEW YORK IS NOT FOUL BROOD.

Mr. Taylor, in this issue of the Review, criticises Mr. E. R. Root because he suggests that there may be two kinds of foul brood, that one kind may vield to drugtreatment, and because he is undecided whether the trouble with bees in York State is foul brood or not. In Gleanings for Jan. 15, Mr. Root says he is now satisfied, from all of the evidence before him, that the trouble in New York is not foul brood. The microscope does not show Bacillus alvei. The preliminary report of Mr. Howard of Texas is to the same effect. Whatever it is, it is very contagious and destructive. The Department of Agriculture at Washington is taking an interest in the matter.

RENDERING BEESWAX.

A subscriber of mine in Illinois sends me a description of how he renders wax. The work is done in the open air. A large kettle is placed in a sort of arch of brick. The kettle is filled partly full of water, and when the water boils the refuse combs, or cappings, are put into the kettle of water-a few at a time. As the wax melts it is dipped off along with whatever rises to the top, and poured upon a piece of wire cloth fastened over a large tub of cold water. The tub is made from a barrel sawed in two and one-half taken for a tub This takes the muss out of the kitchen, allows the work to be done quite rapidly, and my friend thinks that he secures all of the wax that it is worth while bothering to get. The use of a press on the slum gum might cause him to change his mind.

TALL SECTIONS.

Mr. Martin, in this issue of the Review, asks what advantage there will be in tall sections after we have all adopted them? If they sell better now, it is only by comparison. When they are all tall there Will the price will be no comparison. of honey be any higher then? This point is well worth considering. If the tall section has no advantage in itself, that is, no advantage except as it comes in comparison with the square section, then when everybody has adopted it we would be no better off than before. The editor of Gleanings says that preference for tall sections is not wholly that of price. The form is really more beautiful; the 4 x 5 sections is a trifle larger than the 414 x 44, and allows of the comb being a trifle thinner for a pound of honey; these thin combs being filled and sealed quicker, with fewer uncapped cells; bees build combs downward more rapidly than they extend them sidewise; and tall sections stand shipment with less danger of breakage than the square ones.

ONE WAY TO GET RID OF AN INTERLOPER; ONE WHO UNFAIRLY COMES IN-

TO OUR FIELD.

In another place in the Review I mention that Mr. Root says the good locations in Colorado are already well-stocked. Gleanings for Feb. I. Dr. Miller asks if there would be anything criminal in his settling down with his bees next door to Mr. Rauchfuss. Editor Root says there would be nothing criminal, but there would be trouble all the same. One man tried that very thing, by settling down near an out-apiary belonging to the Rauchfuss Bros. They simply increased the number of colonies in this yard, until there was no profit for the man who came in. I have heard of this plan being worked before now; but suppose the man who comes in has more bees than the original occupant? This appears to be one of those rules that might be made to work both ways. No man of sense, however, would ever be so foolish as to attempt to keep bees in a field that is already occupied.

There is one more point: If it is possible to thus drive out an interloper, it proves that there is such a thing as overstocking.

THE HONEY MAKERS.

Aside from text books, and those containing instructions for the management of bees, there are few books upon apicultural subjects. Of those in which the general public is likely to be interested, there are few indeed. Much good might be done both to the public and to bee-keepers by the publication of books so written that they would be interesting, and thus would be read, and at the same time would give the public the right kind of information regarding bees, bee-keeping, and honey. It may seem strange, but it is nevertheless true, that the public is wofully ignorant and somewhat prejudiced upon these For these reasons we should subjects hail with delight every book that is likely to help fill this empty niche. Of such a character is a book just brought out by A. C. McClurg & Co., of Chicago. The title is "The Honey Makers," and the author is Margaret Warner Morley. It is a book of over 400 pages, well illustrated, and the price is \$1.50.

This book was the outgrowth of a little book for children that the author started to write, because she needed one, and could not find it. She happened to be in Florida for the winter, "with time and plenty of bees flying. " Ultimately, three years were spent upon the subject. She found that there was no end to the subiect. There was an immense field "unbrowsed" by any one in this country. A year was also spent digging good things out of the literature of all countries. The result was that there was too much materiai for a book for children; so she made two books—me for children, called "The Bee People," and one for grown people, "The Honey Makers."

Miss Morley examined bees with the microscope, and the illustrations and descriptions in the chapter on the structure of the bee are unusually good.

Part II is devoted entirely to the literature and history of the bee, and shows that a vast amount of reading and work must have been done in its preparation. There is probably no book in which has been gathered together so much of the poetical and fanciful regarding bees. The author makes no pretentions, of course, to teach bee-keeping, but rather to gather together those things about bees, bee-keeping and honey that are likely to be of interest to the general reader; and, for one who is not a practical beekeeper, slie has kept her work wonderfully free from errors. Bee-keepers will enjoy this book, even if it does not teach practical bee-keeping.

EXTRACTED.

BLACK BROOD.

The new Bee-Disease in York State is not Foul Brood. The Name Given it is Black Brood.

Dr. Howard of Texas has made over 1000 microscopical examinations of the diseased brood from York State, besides doing a great deal of other work connected with the scientific research of the subject. He finds that it is an entirely new disease, and quite distinct from foul brood. Gleanings for Feb. 1 gives the following description:—

Right in the center of a larva three or four days old, as it lies curled up in the bottom of the cell, may be seen a very small yellow spot, about like the head of a brass pin. This spot appears to be right in the center of the coil, for it will be remembered that a three-days-old larva lies curled up in a circle; and it is in the middle of this circle, or what may be considered the inside of the body, that the yellow spot is found. But the larva is still alive, and will continue to grow; but the spot

grows larger until the larva begins to assume the color of a dark-yellow or brown, when it dies. Sometimes the dead matter looks almost like white glue; but when the larva dies after it is capped over the matter will have a coffee color. It ropes very slightly, and is of a watery consistency; but before it will rope at all it has to be of the right age. When it is remembered that it is only occasionally that this diseased matter will rope, and that only very slightly, and that foul brood invariably does so, the dead matter stringing out sometimes two or three inches, it will be seen there is quite a distinct difference. At its first appearance black brood has a sort of sour smell, while foul brood has a foul or sickening odor like that of a glue-pot.

SELLING CANDIED HONEY.

If Rightly Managed it is More Profitable and Satisfactory all Around.

I doubt if candied honey can ever be put up in such a manner as to be as attractive as liquid honey put up in glass. Mr. Selser makes a grand success of buying honey, and paying good prices, and then heating up the honey, bottling and labeling it, and selling it at a good profit. But there are advantages in selling honey in the candied state. The package costs less, there is no danger of breakage, and no annoyance from having to take back and liquefy honey, as is sometimes the case when a producer tries to keep his customers supplied with liquid honey. Mr. R. C. Aikin of Colorado is a strong advocate, and practicer, of selling honey in its candied state. Mr. Root of Gleanings recently attended the Colorado convention, and in Gleanings he gives the following account of Mr. Aikin's success in selling candied honey. He says:-

When he (Aikin) first began selling his product he looked up the markets at Chicago and other cities, and found that, after freight, drayage, and commission had been deducted, there would be but very little left for him. He then concluded that, if he could sell his honey as cheaply, or nearly so, as sugar and other standard sweets, consumers would buy it in preference, and he would make a bet-

ter profit than to send to the city, and be sure of his money. Accordingly, he has for several years been selling his crop around home, and selling little or none to the city markets. He put the price low, and retailed it out in large and small lots, with the result that he had been able for several years to sell his honey almost at his door, and get for it, in return, cash from neighbors and friends, rather than wait six months or longer on commission men of doubtful reputation.



He exhibited his pails of honey—honey candied solid. These packages were nothing more or less than small lard pails, with sloping sides, so that they would nest. They bore a very neat lithograph design on the outside. By first purchasing the stone (something that is analogous to an electrotype for ordinary printing), the makers of the pails lithographed all his stock at a slight additional cost.

It is characteristic of Colorado honey that it candies very quickly. These pails are filled by Aikin shortly after the extracting or before granulation; and the honey statement in the lithograph design explains how the honey may be reliquefied after placing it in a pan of hot water.

These lard-cans have the advantage of cheapness, being almost the cheapest article that can be bought. Self sealing is rendered unnecessary, because the honey candies so quickly it will soon be as solid as so much lard, and hence may be shipped safely to almost any point.

Mr. Aikin's favorite method for packing for shipment was to put these pails into common, cheap cracker-barrels, pack straw between them, head the barrels up, and, presto! they are ready for any kind of rough handling, and for almost any distance by rail.

It developed in the discussion that very many were fond of candied honey; and Mr. Aikin had no doubt been responsible for educating consumers in his locality to the palatability of honey in that form.

SUPERIOR BREEDING QUEENS.

Why the Queens of some Breeders do not Come Up to Advertised Qualities; Controlling the Parentage of both sides; Another Record-breaking Queeu.

Our hives and methods of management are probably not perfection, but they are pretty fair, at least; our methods of putting up honey and marketing it may possibly be considerably improved; but at present the most promising field in which to turn our energies loose si in that of improving our stock. Too many of us look upon bees as bees, in something the same way as a country merchant buys butterit's all butter. The man who has kept bees many years, trying different strains, and keeping his eyes open, well knows that there is a great difference in bees. The most of us know this. The trouble is that we do not put our knowledge into practice. Right in this line of thought, Gleanings publishes a most excellent article by that veteran, J. F. McIntyre, of California. Mr. McIntyre also points out the difficulties to be encountered in

securing good stock, and tells of his final success. Here is the article:—

I have never advertised queens for sale, but have bought queens from every breeder in this country who claims to have anything superior, and I am sorry to say that I am generally disappointed. Why is it that we are so often disappointed in buying the daughters of a queen claimed to be very superior—stock?—These daughters should be all that is claimed for their mother, and we are disappointed if they are not.

There are several reasons why the young queens may not be as good as we expect from reading the advertisement. First. The claims may be exaggerated; but I have charity enough to think that this is not where the trouble generally comes in.

Second. The young queens may not be as well reared as their mother was. I believe this is true in about ninty-nine cases in one hundred. We find a very superior queen in the apiary, probably raised under the superseding impulse, and start out to duplicate her by starting a large number of cells from her larvæ in a queenless colony, or in a super above a queen-excluder, which is about the same thing, as the bees regard that part of the hive as harmless; and the result is a lot of queens below the average in quality. To duplicate your fine breeder the young queens must be reared as close to nature's best way as possible. The Doolittle cells placed in the middle of a broodchamber, where the colony is superseding its queen, or preparing to swarm, give the best results in my hands, and the superseding colony is better of the

Third. The young queens may not have married as well as their mother, and their children inherit a lazy disposition from their father. As in the human family, this is a hard matter to control, but it is best done by raising an abundance of drones from an equally good queen in no way related to the one you rear queens from, and by killing inferior drones.

Fourth. Queens are often injured by long confinement in the mails, especially if they are laying rapidly when caged and shipped. When a queen comes out with a swarm she is in the best possible condition for a long journey by mail. The overies are then small, and not so liable to injury as when they are large and full of eggs.

Larger cages should be used for shipping valuable breeding-queeus. The export Benton cage is none too good to mail a

breeding-queen from the East to California, and the long-distance Benton is about right for all others.

This subject of superior stock is now the most interesting to me of any connect-

ed with the bee-business.

I am interested in the statements made by Mr. Wright, on page S29, about a queen which he calls "Sweetheart," and would pay fifty cents more than the regular price paid for one of her daughter's select tested, and one dollar more if the young queen was reared in a colony superseding its queen and mailed in an export cage; and if you could insure her mating with a drone from as good stock as herself, which would make the young queen as good as her mother, you might add another fifty cents. Seven years ago I bought a queen from a man named Wallace, who advertised that he was raising queens from Dadant's best stock. raised about twenty queens from this one to test the stock. The next season was a dry one, and most bees had to be fed to keep them alive; but several colonies out of the twenty filled their supers with honey. Next season, 1895, I bred from the best of these; and in 1896, which was another dry year, this strain again filled their supers when others were starving. I have had many colonies of this strain which I considered ideal bees, and think that they have been improved by breeding from the very best each year. present year was a very dry one, but I have one colony of this strain that filled 212 ten-frame L. supers; and I wrote in my record-book, after the number of this hive, that such bees would make a man rich. They are beautiful, pure Italians, light three-banded, queen large and yellow, and very prolific. I have raised about 200 young queens from her, and they are all like their mother. Her bees are gentle. She was one year old last July, and has never swarmed; and this strain does not swarm half as much as any other strain in my apiary. It is rare for me to become enthusiastic over a queen; but when a colony shows a marked superiority over 600 others in the same apiary, it is a rare thing.

Editor Root comments as follows:-

You have very fairly and candidly set forth some of the reasons why queens of good mothers do not equal the original stock. It is true, that some of those (not all) that travel long distances in mailing-cages do suffer more or less from confinement, exposure, and rough handling; and that is one reason why I have been urging every honey-producer to

learn to rear his own queens by the Doohttle method; and while referring to that method I agree with you, that those reared under the swarming or supersedure impulse are much superior to those reared by the other plans. A colony that is about to supersede its queen we consider a prize; and if we can get four or five of them, we feel that we are in clover. But, of course, when we have no such colonies we use the next best—i. e., bring about the swarming impulse artificially by feeding a little every day; but even then an actual honey-flow is ahead.

With regard to your breeding-queen, the one that has made such a fine showing, we hereby give you an order now for three of the best of her daughters, if you will sell them, to be sent next summer, you to set your own price. We would make you an offer for the breeder; but, even if you accepted, by the time she arrived here through the mails she might be almost worthless as a breeder, especially if she were getting to be old, and it would be not wise to take chances on

such a queen.

Ves, sir; when one colony shows such marked superiority over 600 others in the same apiary it is indeed a rarity, and that queen is a prize. I hope you will supply other breeders with your stock as well as ourselves, for the time is surely at hand when better honey-queens rather than better colored ones should be sought.

—Ed.]

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

Fancy.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoited by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark, "etc,

KANSAS CITY.—We quote as follows: No. 1, white, 14; No. 2 white, 13; No. 1, amber, 13; dark, 12½; extracted, white, 7^4_2 to 8^4_3 amber, 7^4_4 to 7^4_2 ; dark, 5 to 5^4_2 ; beeswax, 22.

C. C. CLEMONS CO., Dec. 20. 423 Walnut St., Kansas City, Mo.

CHICAGO, Ill.-At present the demand for honey is somewhat slow, but we anticipate more inquiry and better prices. We quote as follows: Fancy white, 15; white, 15; amber, 12; dark, 10; white, extracted, 8 to 9; amber, 7 to 8; beeswax,

Jan. 23.

Jan. 23.

Jan 8

S. T. FISH & CO., 189 So. Water St., Chicago, Ills.

NEW YORK .- Stocks of comb honey are very light, and we could use some to good advantage. We quote as follows: Fancy white, 15; No. 1 white 13 to 14; fancy amber, 12 to 13; No. 1 amber, 11 to 12; fancy dark, 11; No. 1 dark, 10; white, extracted, 8½; amber 7½; dark, 6; becswax, 27 to 28.

HILDRETH & SEGELKEN 120 West Broadway, New York. Dec. 22.

BUFFALO. N. Y .- There is very little new honey in the market, and the demand is very good. We quote as follows. Fancy white, 15

W. C. TOWNSEND, 86 West Mark et St., Buffalo, N. Y.

BUFFALO, N. Y.—Fancy comb honey is in great demand; and all grades move well. Twothirds value advanced on arrival when desired. Please write 18. We quote as follow: 'amey white, 16 to 17; No. 1 white, 15 to 16; fancy amber 122, to 14; No. 1 amber, 10 to 11; fancy dark, 9 to 10; No, 1 dark, 8 to 9; white, extracted, 7 to 8; amber, 512 to 6; dark, 5; beeswax, 28 to 30.

BATTERSON & CO Jan. 23. 167 & 169 Scott St., Buffalo, N. Y.

CHICAGO, H.L.-We quote best white comb at fifteen cents. An occasional small lot of fancy sells at sixteen; off grades of white, twelve to fourteen cents; ambers ten to twelve cents. Extracted, eight to nine cents for fancy white, seven to eight cents for amber, six to seven cents for dark grades. Beeswax twenzy-seven cents, Receipts are larger and the demand is not as good as it has been.

> R. A. BURNETT & Co., 163 So. Water St., Chicago, Ill.

NEW YORK, N. Y.—There is a steady demand for all grades of comb honey—The receipts are not heavy. We quote as follows: Fancy white, 15 to 16; No. 1 white, 131 to 141; (amber, 11 to 12; buckwheat, 9 to 11. Extracted honey is steady at buckwheat, 9 to 11. Extracted noney is seen, ... the following prices: California white, 81₂ to 6; light amber, 8 to 81₂, white clover, 81₂; amber, 71₂; he seemed of buckwheat, 61₂ to We are asking, for extracted buckwheat, 64, to 7 cts, for kegs, and 7 to 74 for tins, according to quality, but with very little trade. Florida extracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8; amtracted honey, 8 to 84, light amber, 7½ to 8 to 80, light amber, ther, 7 to 712. Other grades of southern at from 75 to 80 ets. per gallon, according to quality, Beeswax, a little more active at from 27 to 28 per

FRANCIS H. LEGGETT & CO W. Broadway, Franklin & Varick Sts Jan. 11.





QUEENS.

Reared by the best methods known.

Unfested, single queen, 75 cts.; six for \$4.00; one dozen, \$7.50. Tested queens, just double these prices. Choice breeding queens, from \$3.00 to \$5.00. Circular telling how to introduce any kind of a queen, free.

E R. JONES.

3-98-12t

Milano, Texas

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

3-99-tf

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.

-----FOR 14 CENTS We wish to gain this year 200,000 new customers, and hence offer 1 Pkg. City Garden Beet, 10c 1 Pkg Earl'st Emerald Cucumberific 1. La Grosse Market Lettuce, 15c 1. Strawberry Melon, 15c 1. Strawberry Melon, 15c 1. Early Ripe Cabbage, 1. Early Ripe Cabbage, 1. Early Ripe Cabbage, 1. Early Dinner Onion, 10c 1. Strawberry Melon, 10c 1. Strawberry

Above 10 Pkgs. worth \$1.00, we will mail you free, together with our great Catalog, telling all about SAIER S MILLION 00 LIAR POTATO npon receipt of this notice & 14c. stamps. We invite your rade, and a know when you once try Saizer's 2000 Prizes on Saizer's 1900 - rarate ariset Fonato Giant on saith. F. 5c.

est earliest l'omato Giant on earth. JOHN A. SALZER SEED CO., LA CROSSE, WIS.

The A B C— Bee Culture.

Read what Dr. C. C. Miller says in the National Stockman:—

"Not a bad index of the advancement of bee culture in this country is the fact that besides two or three other good books on bee-keeping, the A B C of Bee Culture has been so extensively used that it has reached its 67th thousand. The name is rather a misnomer, suggesting as it does a small primer for children. Instead of that it is the most comprehensive work in the English language pertaining to bees. and a more appropriate name would be The Encyclopedia of Bee Culture. It contains 437 pages measuring 912 by 614 inches each. It is profusely illustrated with fine pictures, many of them full page, and is printed on elegant paper in clear type that is a delight to the eye.

It was first written by A. I. Root something more than twenty years ago, but bee-culture is not a science that is at a stand-still, so during all these years the book is kept standing in type, and with every advance in bee culture there has been a change in type, so that the book. now double its original size, is just a little in the condition of a boy's jack-knife; he lost a blade and had a new blade put in, then the handle was broken and he got a new handle; but still it was 'the same old knife.' The work has been ably revised lately by E. R. Root, son of A. I. Root, also a skillful and experienced beekeeper, and the whole is entirely up-todate and practical. For one who has a single colony of bees, and who desires a work to which he can confidently turn for an answer to the thousand and one questions constantly coming up in practical bee-work, it would be hard to invest \$1.20 more profitably than to send for Root's A B C of Bee Culture."

See what F. Danzenbaker, inventor of the Danzenbaker hive says:—

"Mr. E. R. Root:—I have read former editions of the ABC of Bee Culture, and I have carefully read all of the lastest. It is so greatly improved, and brought down to date, brimful of the latest experiences of the most successful methods in all departments, that it might well be rechristened 'Bee-keeping from A to Z.' The hundreds of expensive and beautiful illustration's display to the eye what the text conveys to the mind, in a way to cover the entire field of apiculture, for beginners and veterans alike.

It is worth many times its cost to a beginner with but a single colony, and to those who have handled hundreds of colonies half a lifetime as well. It would have been worth thousands of dollars to me if I could have had such a book forty years ago, and I would not take \$50 for the copy I have now if I could not get another.

If it could be placed in every school and library in our land, for the instruction of the masses, it would greatly increase the consumption as well as the production of honey, adding greatly to the health and wealth of the people."

Sold by dealers in bee-keepers' supplies, or sent post-paid on receipt of \$1.20.

See our advertisement on back cover.

The A. I. Root Medina, Ohio.

QUEENS

Are my specialty. I have 500 colonies and can, if necessary, run 1,000 melei. I shall have two experienced apiarists in my employ. I can begin sending out queens of this year's rearing as early as March; and throughout the whole season I shall send them

By Return Mail.

My bees are Italians, from imported stock, also from Doolittle, as well as from selected home bred stock.

Prices are as follows: Untested. \$1,00; 3ix for \$5.00; twelve for \$0.00. Tested. \$1,50; six for \$5,50; twelve for \$15,00. Best breeder, \$4.00.

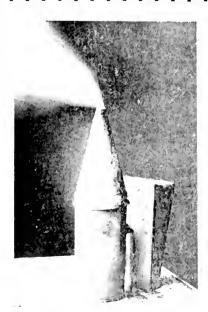
Root's Goods

At Root's prices plus carload rate of freight. 2-00-tf

W. O. Victor,

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections. frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It



A Veteran.

This smoker has been in use in the apiary of the editor the Review for the past ten years, and, so far as practical use is concerned, is exactly as good as new. This is a characteristic of the Bingham smoker—they last. The Smoke Engine, Doctor and Conqueror now have a brass, telescopic hinge. Send fordescription and prices to T. F. BINGHAM, Farwell, Mich.

ieens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

The Time has Arrived

for you to buy your shipping cases, those five-gallon caus, and a few hundred of the new Danz, cartons (send for sample) to harvest that crop of honey in proper We can furnish you with these shape. and all other supplies. Cash paid for beeswax. Send for catalog.

> M. H. HUNT & SON, Bell Branch, Mich.

Please mention the Review.



Did you know the WESTERN BEE KEEPER has changed hands? C. H. GORDON is now Editor and Pub.

Wanted Every bee-keeper large or small to send 150 for four months trial,—sample copy free.

47 Good Block, Denver, Colorado.

Bee keepers should send for our

CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive. J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

Wanted! Your Honey.

We will buy it, no matter where you are. Ad-

dress, giving descrip-

tion and price.

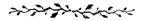
THOS. C. STANLEY & SON, Fairfield, IIIs,

Now is the time for all Eastern and Southern Bee-Keepers to send in their orders for Bee-Hives and Bee-Keepers' Supplies. We have a special offer to make to all Eastern and Southern buyers. Let us know your wants and we will take pleasure in showing you that we can really save you money over our Eastern Competitors. The reasons are two-fold. In the first place, we are located in the lumber region of Wisconsin, and get our supply of lumber direct from the mills; whereas, our Eastern competitors are buying lumber in our State and paying freight on rough lumber, which weighs much more than the finished product, to their Eastern factories, and then freighting the finished product back all over the West. In the second place, we support no branch houses or middle men. We self direct no match moses of mode me. We set uncer to the consumer, and the only way a dealer can make a profit off our goods is by buying the larger quantity which is open to any purchaser, and selling at the small quantity rate. The cost of an article is based on the cost of material (here we shine), the cost of labor, and a reasonable profit to the manufacturer. We sell our goods on this basis, while the manufacturer who sup-

ports branch houses all over the United States, and some in foreign lands, must add to what we would consider a fair selling price, the freight charges from his factory to his supply-house; he must have interest on his investment while his goods are waiting for a purchaser; he has rent to pay every month his branch house is kept open; he has additional insurance on the goods in branch houses; he must pay cartage from the cars to his branch house, and again back to the cars. Then the manager and clerks in the branch house must be paid. All these things tend to increase the cost of the commodity to the consumer. If prices are the same at the branch house as at the home factory, then the price at the home factory must be raised to meet these constantly increasing expenses; and the bee-keeper who takes his supply from the home factory is helping to support the branch houses in different States.

We sell f. o. b. cars at Hudson, with an allowance on freight for goods going east of Chicago. Buy your Bee Hives and supplies from us and you will get the goods at first cost.

Superior Stock.



Every bee-keeper who has had experience with several strains of bees knows that some are far superior to others-that there is scrub stock among bees, just as there are scrub horses, cattle, sheep and poultry. Let me give my own experience. Years ago, while living at Rogersville, I made a specialty of rearing queens for sale. Before engaging in this work I bought Italian queens and Italianized, not only my own bees, but all within three miles of my apiary. buying those queens I think that I patronized nearly every breeder in the United States; and even in those years of inexperience I was not long in noting the great difference in the different strains of bees. The queens from one particular breeder produced bees that delighted me greatly. They were just plain, dark, threebanded Italians, but as workers I have never seen them equaled. They seemed possessed of a steady, quiet determination that enabled them to lay up surplus ahead of the others. bees to handle I have never seen. It sometimes seemed as though they were too busy attending to their own business to bother with anything else. Their honey was capped with a snowy whiteness rivaling that of the blacks. In addition to these desirable traits must be added that of wintering well. If any bees came through the winter it was the colonies of this strain. They came as near being ideal bees as any I have possessed. All this was twenty years ago; and several times since then I have bought queens of this same breeder, and I have always found this strain of bees possessed of those same good qualities-industry, gentleness, and hardiness. In addition to this they cap their honey as the blacks do theirs. I have frequently corresponded with this breeder, and with those who have bought queens of him, and I am thoroughly convinced that he has a strain of bees that are far superior to the general run of stock - If I were starting an apiary, for the production of honey, I should unhesitatingly stock it with this strain of bees

This breeder has always advertised in a modest, quiet sort of way, nothing in proportion to what his stock would have warranted, and I have decided that I can help him, and benefit my readers, at a profit to myself, by advertising these bees in a manner befittingly energetic.

The price of these queens will be \$1.50 each. This may seem like a high price, but the man

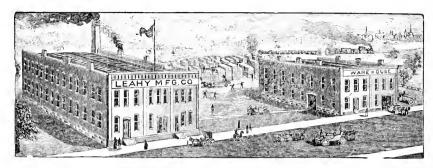
who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem so high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen SHOULD prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed, Instructions for introducing will be sent to every purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all; if, at any time within two years, a purchaser, for any reason WHATEVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble. It will be seen that the purchaser runs no risk whatever. If a queen does not arrive in good condition, another is sent. If he loses her in introducing, another If she should prove impurly mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is REALLY SUPERIOR.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price, and that is in connection with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review for 1000, can have a queen for \$1.00. That is, you can have the Review for 1000 (and 12 back numbers) and a queen for \$2.00. Of course, all arrearages must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arrearages and to pay in advance to the end of next year.

Of course it is now too late to send out queens, but they can be ordered, either alone, or in connection with a subscription to the Review, and the orders will be booked and the queens sent next spring.

W. Z. Hatchinson, Flint. Mich

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of live stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polsihed sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. GO., Higginsville, Mo.. East St. Louis, Mo. Omaha, Nebrasha.

Prices Tell.

\$\forall \forall \fora

Being located where we can buy basswood bolts at a very low price, and owning a factory furnished with machinery well adapted to the manufacture of sections we are able to furnish strictly—first-class, snow-white

SECTIONS.

in 5,000 lots, at \$2.15 per thousand; less than 5,000, \$2.25 per thousand. No. 2, in 5,000 lots, at \$1.50 per thousand; less than 5,000, \$1.65 per thousand. We also furnish hives, supers, shipping-cases, and all kinds of supplies. Send for catalogue.

H. RIENOW& SON,

Prairie du Chien, Wis.

Latest Improvments Perfect Goods Reasonable Prices.

Hives, shipping cases, sections, extractors, etc., everything a bee-keeper needs. Catalogue and copy of the American Bee Keeper /ree.

The American Bee Keeper is a live monthly and has been published by us for the past ten years—50 cts, per year.

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

Page & Lyon,

Mfg. Co.

New London, Wis.

Nearness to pine and basswood forests, the possession of a saw-mill and factory fully equiped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be ntilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN.

SPROUT BROOK, N. Y.

YARDS, RAGES.

Italian, 3 - Banded Italian, and Holy Lands.

We have secured our stock from the best breeders of the U. S., and now we are able to offer the best strains of the best races in America. Queen Rearing is our specialty; we have been at it for years, and this department is under the immediate supervision of our Mr. H. H. Hyde. We want the address of every bee-keeper for our queen circular which gives prices and methods of queen rearing, honey production, prevention of swarming etc. Prices, either race:-

Untested June, July, Aug. and Sept.

75 cts ; 6 for \$4.25

All other months, \$1.00; 6 for \$5.00. Tested, June, July, Aug. and Sept., \$1.25; 6 for \$6.75. All other months, \$1.50; 6 for \$8.00. Discounts for quantities.

Select tested and breeding queens a specialty.

O. P. HYDE & SON,

1-00-tf

Hutto, Texas.

19

This is the original one - piece section-man who furnishes onepiece sections as follows:

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

I. FORNCROOK.

Watertown. Wisconsin.

Listen! Take my advice and buy your bee supplies of August Weiss: he has



tons and tons of the very finest

OUNDATION

ever made: and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade. delivered ere. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies. Send for catalogue and be your own judge. AUG. WEISS, Hortouville. Wisconsin.

WHNTER

Losses are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from imperfect protection; from a cold, wet, or possibly, a poorly ventilated cellar, etc, Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult "Advanced Bee CULTURE." Five of its thirtytwo chapters treat as many diferent phases of the wintering problem.

Price of the book, 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON,

Flint, Mich.

Violin for Sale.

I am advertising for the well-known manufacturers of musical instruments, Juo. F. Stratton & Son, or New York, and taking my Stratton & Son, of New York, and cashes apply in musical merchandise. I have now on hand a fine violin outfit consisting of violin, how and case. The violin is a "Stradiuarius," Red. French finist, high polish, and real cheap trimmings, price \$14.00. The bow is of the finite of the est snakewood, ebony frog, lined, inlaid (pearl est snakewood, ebony frog, lined, inlaid (peuri-lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and peurl dot in the end, price \$2.50. The case is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is ex-scribth, same kind of an outfit that my daughactlyth same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some instruments here that cost several times as much. I wish to sell this on tit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines, lowa, manufacturer of and dealer in Apiarian Supplies. Send for circular.

Please mention the Penieur.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind. I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saving what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Reared from imported mothers, warranted purely mated, 75 cents each.

Breeders, No better stock to be had at \$1 25 each. Send for catalogue of queens any price. and bees. DEANES & MINER: Ronda, N. C.

Make Your Own Hives.

Bee - Keepers

MAY

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Will save money by using our Foot Power Saw in making their hives, sections and boxes.

Machines on trial. Send for Catalogue.

W. F. & JNO. BARNES CO..

384 Ruby St.,

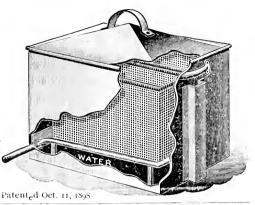
Rockford, Ills.



Beeswax Extractor.

The only Bees Wax Extractor in the world that will extract all the wax from old combs rapidly by steam. Send for descriptive illustrated catalogue.

> C. G. FERRIS, South Columbia, N. Y.



I have several hundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in appropriate We also

in summer and winter. We also carry a complete line of other supplies. Catalog free. R. H. SCHMIDT & CO., 9-99-tf. Sheboygan, Wis.

Please mention the Review

- If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

JOHN F. STRATTON'S CELEBRATED



Birmingham Steel String's

for Violin, Guilar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catlg

JOHN F. STRATTON,

Importer, Manufacturer and Wholesale Dealer 811,813,815,817 E. 9th St., N. Y.

Please mention the Review.

1900 Queens 1900

For Business-Queens for Strong Colonies-Queens for large surplus. Competion in Quality, but not in price.

If you want queens, nuclei or supplies at bottom prices, send for my illustrated price list.

12-97-11

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the Keview. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

THE

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight,

If You Wish Neat, Artistic



Have it Done at the Review.

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APIARY AND HOME OF HARRY LATHROP, OF BROWNTOWN, WISCONSIN,

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

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TRACTED HONEY WITH EIGHT-FRAME, LANGS-TROTH HIVES. BY HARRY LATHROP.

While my specialty has been the production of fancy comb honey, I have



always extracted some every year since I began keeping bees, about 17 years ago, and at present I have two, 2-frame, Cowan extractors in use, one for each of my apiaries, and if I establish another yard, I

expect to purchase another machine; for I want the extractor always at hand ready for use. Speaking of extractors, I would not trade my two-frame Cowan machines, as made by the A. I. Root Co., for any four-frame machine I ever saw. They work so easily, and I think one person can extract with them as rapidly as another can uncap the combs. There is a much disputed question among beekeepers as to which pays better, the pro-

duction of comb or of extracted honey. The extracted-honey-man will tell you that he has no expense after getting established, except for the purchase of barrels to put the honey in; and then he can produce so many more pounds per colony of extracted than he can of comb; on the other hand, the one producing comb honey has to buy sections, foundation, and shipping crates every year, etc. The comb honev expert will reply that he can produce nearly as many pounds of comb honey as the other can of extracted; that by getting all fixtures prepured ahead he can attend to as many colonies as the other can, and, besides getting a better price for his product, he gets well paid for the sections as they are weighed in with the honey when sold; that he is willing others should believe extracted honey production to be the most profitable; thereby leaving him a clearer field. I will not attempt to decide which has the better argument, but with state my conviction, which becomes stronger with experience, that, for the average bee-keeper, the best plan is to combine the production of both comb and extracted in the same apiary. I want to be prepared to work for comb honey when all conditions are just right; and then, when conditions change, work for extracted. Fancy comb honey can be produced only when the season is right, the honey flow right, and the colony right; whereas, if we get a little honey only in the extracting combs during the time that conditions are unfavorable, it is always in marketable shape, and there is no loss.

But my theme is the production of ex-. tracted honey, to which I must now resort. I will tell how I would manage an apiary in Langstroth or Dovetailed hives, as those are the hives I use, and the hives in general use. I will state, also, that mine are eight-frame hives; as I wish them that size when used for comb honey. and I think by tiering up they can be made large enough for extracting hives. As soon as the bees are taken from their winter quarters I would look carefully to the needs of each colony, with a view to promote brood rearing and the getting each one into good condition for work when the honey harvest begins.

As the season advanced I would give to each colony strong enough to occupy it, a second story of good worker combs. would watch to see that the queen occupied both stories. I would change combs from one to the other, if necessary, so as to get brood in as many as possible. Then, when the honey flow began, I would put a queen excluding zinc on top of this two-story brood-chamber; these two stories being for the exclusive use of the queen for the season. Over this 1 would place a set of extracting combs. As soon as this first set is pretty well filled with honey, and capping has commenced, I would raise it up and put another set of empty combs under it; thus keeping the honey always at the top where the ripening process can be completed without the necessity of having each comb completely sealed; for it is a well known fact that if a comb full of honey remains on the hive a sufficient length of time the honey will ripen, even if not a single cell is capped over. whether I would continue the same process by giving still another set of combs,

making it a five story hive, would depend on the colony and the condition of the honey flow. It is not possible to give each colony precisely the same treatment. In tiering up one has great advantages in respect to ripening, over the one who uses a larger hive with only a single extracting super, no matter how many combs it may contain. As soon as the honey in the top-most story is ripe I would take it off and extract at once; as the honey will come out of the comb more readily while still warm from the hive. It is easy to determine whether honev is fit to extract or not. If it is the least bit watery, the comb should be returned to the hive, which I believe to be the best place for ripening. I will here state that there will be very little, if any, swarming in an apiary run for extracted honey on this plan; and hives so operated are the only real non-swarming hives worth having.

Some may object to the great number of extra combs required for so much tiering-up, but I reply, if you have not the combs to do this, then you are not properly equipped for the business.

In the extracting-room I have the extractor and several other necessary articles. One is a large tin can with a syrup gate at the bottom to strain into. Many use a barrel with the head out for this purpose; and it is all right, and some cheaper than the can. A large piece of cheese cloth tied over the top of the can is the best strainer I know of. Several pieces should be kept on hand so as to have a clean one ready to put on when the one in use gets gummed up.

Then comes the uncapping-box. Many bee-keepers use a can for uncapping over—such as supply dealers list at about \$7.00 each. I can tell you how to make an arrangment away ahead of that, for about \$1.50 for material, and a few minutes work. Get the tinner to bend up a long piece of galvanized sheet iron into the shape of a round bottomed trough, eighteen inches across the top, and about a foot deep. Solder end pieces into it and

put a small spout in one end to let the honev run out. Hang this trough in a wooden frame having legs long enough to bring the top of the trough to a convenient height for uncapping, leaving the spout end a little lower than the other end. From tinned wire cloth make a screen to place in the cottom of the trough, the full length, to keep an open space under the cappings so that the honev can readily drain and run out. make a sliding rack on which to rest the comb while uncapping, and you are ready. The length of the uncapping device will depend on the size of the apiary. If there is much extracting to do, by moving the older cappings towards one end they may be left long enough. Set a vessel under the spout, and you will get some nice honey from the cappings. I am surprised to know that at least one large beekeeper in Wisconsin does not drain his cappings at all, but places them outside for his own and his neighbor's bees to fight over.

We want every thing neat and clean about the extracting room. If visitors happen in, we don't want them to see any bees, flies, ants or any other dirt in the honey—keep every thing clean.

The honey should be left in the straining-tank, or some other similar open-top receptacle, for a few days, when it may be drawn off into barrels, cans, or whatever packages the bee-keeper intends placing on the market. Then set away in a dry ware-house, and there is no fear that it will deteriorate. Granulate, it will; but people are getting to understand that, and know how to handle it accordingly. The household use of extracted honey should be encouraged by placing on the market a strictly first-class article; and explaining the many ways in which it can be used. At the same time, we should try to keep up the price. There is no reason why it should not be worth at least two-thirds the price of fancy comb honev.

In writing on the production of extracted honey, I have omitted many de-

tails; such, for instance, as my method of getting the bees off the combs; in regard to which I will say, whenever the conditions are such that it is slow or unpleasant work to brush them off I can use the Porter bee-escape, which I consider one of the blessings, along with queen-excluding zinc, of the modern producer of extracted honey.

I have not written from the standpoint of a man who runs many apiaries, and sends a gang of hands from one to the other to do the extracting, but from the standpoint of an ordinary bee-keeper who does most of the work himself.

Browntown, Wis., Aug. 25, 1899.



RODUCTION AND TREAT-MENT OF EXTRACTED HON-EY. THE DISTANCE THAT BEES FLY FOR NECTAR.

BY C. DAVENPORT.

The Review for January was, to me, at least, a very interesting issue. Miss Pickard's article was so much so that I believe a good many, like Oliver Twist, will ask for more. For instance, I would like to know if two stories are allowed a strong colony for a broodnest during the main flow; and whether more than one extracting super is used on each colony. I infer that natural swarming is allowed; if so, I would like to know what per cent, of the colonies swarm; also how the swarms are treated; especially whether they are hived on starters, full sheets, or on drawn combs.

And those barrels: I should like full particulars in regard to them. I have never been able to get barrels of either hard or soft wood, no matter how well made, seasoned, tightened, and waxed, that would not leak more or less after honey had been in them for some time. Two years ago last fall I had a large alcohol barrel, full to the brim of fine, white honey, that got to leaking. It was stored

in a room above a basement having an earth floor; and, before I knew it, the honey was att in the cettar. I am willing to give Mr. Dadant full credit for this affair. He said alcohol barrels would not leak. I had also taken the precaution to use between two and three pounds of 26ct. wax on the inside of it. I have been having some correspondence this winter in regard to getting a number of barrels, or cans, perhaps I should say, made out of galvanized iron. My idea is to have them about as large again as an alcohol barrel, so they will hold about 1,000 pounds each, and use them as storage tanks. Such a large receptacle will allow the honey to ripen considerably, and make it much more uniform in quality than when put in small packages as soon as extracted. I would have these tanks set in the honey-house, on benches high enough so that the honey in them could be drawn off into cans without any lifting.

It will not answer in this locality to use one large tank for storage; as we usually get a number of different grades of honey each season. The first extracting from clover is very likely to be tinted with that from fruit and dandelion bloom. After clover comes basswood; then fall flowers, including buckwheat. There is but little tame buckwheat raised here; but a great deal of wild buckwheat springs up each fall in the stubble-fields where various kinds of grain have been grown; and in some seasons, considerable surplus is secured from it.

There is one little kink, and it is not so very small either, about producing extracted honey, that may not be generally known, and that is in regard to straining it. Rambler of California, that land of extracted honey, described, a short time ago, in Gleanings, an ingenious machine that he invented to strain honey; and, judging from the description, I have no doubt that it would do all or more than the inventor claimed for it, but there is no need whatever of straining extracted honey. It will strain itself better than it can be done in any other way. In a short

time after it is put in a can, or anything else that will hold it, every particle of foreign matter, such as propolis, bits of wax, and any bees that may have been drowned in the product of their toil, will rise to the top, and can be skimmed off, leaving the honey perfectly clear. Of course, when it is desired to store honey in shipping-cans, or tight barrels, a tank, or enough cans with open tops, are necessary to hold one day's extracting.

I have never run a whole yard for extracted honey; but I have, for the last few years, run from 30 to 40 of the colonies in the home-vard for extracted; and this leads me to believe that locality may play nearly as prominent a part in the production of extracted as it does in that of comb-honey; and, from experiments I have made, I feel safe in saying that when running for extracted in my locality, considerable more surplus, especially of white honey, can be obtained if the queen is confined to one story during the white flow. When this is done, and only 8 or to frames are allowed for a brood-nest, colonies are about as likely to swarm as they are when being run for comb honey. three or four stories are used, and the queen is allowed the free range of all of them, no colony so treated has, with me, ever tried to swarm; but I probably keep enough colonies in the home-yard to fully overstock its range; and I think there is no question but what that which may prevent swarming in a fully stocked range is liable to partly or entirely fail on a range but lightly stocked. In this locality, allowing the queen unlimited room lessens the amount of surplus; and also makes considerable work. There will be more or less brood scattered through two and three stories; and, in order to get what surplus there is, more frames have to be handled. Then, in the fall, the whole outfit has to be overhauled and reduced down to one story for winter; and is no small task with a whole vard.

Mr. Barber's article was also a very interesting one; and the subject discussed

is a very important one; as the distance that bees will go to gather honey has considerable bearing upon the matter of overstocking; and in deciding the distance apart that large apiaries should be located. What Mr. Barber says is very important; for he cites instances of bees going much farther, I believe, than has ever before been noted and published; although Mr. Doolittle has described how sections were filled, as if by magic, when the honey was secured from five or more On the other hand, howmiles away ever, Mr. Dadant, in the American Bee Journal, some time ago, argued, and cited instances to prove, that bees would go only about three miles for forage. Mr. E. R. Root has, in Gleanings, told how it was necessary to move colonies to their basswood grove; which is, if I remember right, only about three miles away; so, according to two of the wise men of the East, and two of the most practical men of the Middle States, it looks as though bees in the East will gather honey from much greater distances than they will farther West. All that I can say, from positive knowledge on the subject, is that I have had bees profitably gather honey from a little over three miles away; but a bee keeper with whom I am acquainted, and whose veracity can not be questioned, tells me that, for a number of years,he had an apiary located four and one-half miles from the nearest basswood, and that in good seasons large crops were secured from this source; on an average fully as much as a bee-keeping friend of his got who lived right in among the basswoods. Of course, the management, or difference in colonies, might account for this; as it scarcely seems possible that bees four or five miles away could store as much as those right amidst the bloom. It is true that bees fly quite rapidly on a still day; but the wind seems to have as much effect upon them as it does, for instance, upon a person on a bicycle. have often observed loaded bees beating their way in against a stiff wind, apparently not going much faster than a man

could walk. Mr. Dadant and some others have said that bees located in a valley will seldom cross over into another valley two or three miles distant. For some reason, this will not apply here. a number of years I had a large apiary located in a valley which extends nearly North and South. Along the hills and ravines on the West side was considerable basswood. About two miles West is another valley running parallel, having more basswood on its side hills than there was on the sides of the valley where the bees were located, but the bees thought nothing of crossing over to the distant valley; in fact, they seemed to prefer to go over there. The first year that I located this apiary, was a good basswood season; and although basswood honey was being brought in very rapidly, I was unable to see many bees on the trees in their own valley. Trees white with bloom, in which the honey fairly glistened, would not have a dozen bees on them, while in the second valley the basswoods were alive with bees. The bees also ranged freely up and down this second valley for fall forage, of which there was more than in their own valley.

What Mr. Barber said about bees flying close together leads me to relate a still more curious incident, in this respect, that I once witnessed in relation to the apiary just mentioned. In order to reach this second valley the bees had to cross a pretty high hill, to the West, which was mostly timbered except in one place. One day, during a basswood flow, a man who had crossed the hill at this open place stopped and told me there was an immense swarm crossing the hill, and heading towards the yard. He said the bees were flying low on the hilltop, but rose as they psssed it, or, rather, as the land descended, it left them so high in the air that he was unable to follow them. wanted me to go up and see them. I told him they would be gone before we could get there, but he thought not as he said he had watched them for half an hour, and there seemed no end to them.

Then I suspected it must be the bees from the yard. Upon examination I found this to be the case. Right on top of the hill, as they crossed it, they were only eight or ten feet above the ground; not in a very compact mass, but spread out perhaps seven or eight rods; but the curious thing about it was, that these bees flying low were all loaded bees heading for the vard, against quite a strong wind, while up above them, twenty feet or higher, was another stream of bees all going towards the basswood in the valley beyond. These upper bees were going a great deal faster than the lower ones, and did not appear so numerous. The man mentioned had not noticed these upper ones. It was a curious sight, and one that I never saw again, although I went there a number of times afterwards.

SOUTHERN MINN., Feb. 3, 1900.





OSTLY EXPERIENCE COMES FROM HASTY VEN-TURES IN UNKNOWN FIELDS. BY W. O. VICTOR.

I have been much interested in the articles on bee-hunting. They have



carried me back to my first experience with bees: to which I attribute my being in the business.

In 1883, (my! my! 17 years ago.) when in the timber looking for a lost horse, I found a

bee-tree; and at once decided that I would have a fine evening's sport at the bees' expense. Accordingly, I notified a few of "the boys," and we rigged up a two-horse farm-wagon, with spring seats, loaded in our axes, pans, best girls, chaperon, etc., and hit the road in high places,

I remarked "that this is the best country for bees I have ever seen." Some one asked "how I knew?" I replied: "Because the pan is full of honey even before we get to the tree." There was a sudden movement and a vigorous kick which sent the pan to the farth- est part of the wagon, which revealed the fact that my (at that time) best girl had her feet right where we had intended to put our honey. We went right on, just as though the pan was all right; and soon reached the tree.

Axe in hand, each man took his turn, and in short order we had the tree on the ground, the bees in the air, and boys and girls in the brush fanning-mosquitos, to beat the mischief. After looking vishfully for some time, frequently licking our lips to see if there was honey on them, we sent a committee to a nearby negro's house for help. He promptly came to our relief, and we soon had our lips on the lucious sweets that disappeared almost as suddenly as did the boys and girls when the tree fell.

Shortly after this I found a colony of bees in some grape vines by the roadside, as I was passing with my sewing machines. Ves, I was a sewing machine agent; having taken the agency as temporary employment until I could decide on a permanent business.

I promptly made me a frame hive, and went to hive them. I found they had been there since spring (that was late in summer, had comb, brood and honey, and would not stay in my hive. I finally hired a man to take them down; which he did, and continued to do, until, one by one, they were all destroyed or driven By this time I had been stung severe/r: and had a red-hot bee-fever.

A friend, seeing my sad condition, gave me a colony of bees, in a nail keg. This, however, did not give relief; so I bought some 20 colonies in box hives in Colorado county. The following spring I had hives, frames and foundation ready. My first foundation cost me \$1.24 per pound, express included. I arranged to have my swarms hived; going occasionally to look after them. My bees in Wharton county had been increased to three colonies by going to the woods for some and carrying them home. I was a farmer bee-keeper, on a bec-keeper farmer, and between the two did not farm successfully.

In June I discovered that my bees in Colorado Co, were not getting much honev, while those at home were doing fairly well: so I decided to move them all home. I hired a wagon and went after them. My idea was to move the bees at night. I went to work and tacked the oil cloth down over them, and wired up the enterances. My gable tops did not load well; so I decided to send them by rail; and, as I got a hive ready, I set it in the shade, loa ling the cover on the wagon to go to the depot. When everything was ready I went for my horses. them being a little foolish, tried to jump a picket fence and stuck five pickets in him. While getting the horse patched up so I could leave him, the sun shifted around and caught my bees; and, on returning, I found honey and wax running from the hives—Becoming disheartened, I fell on a lounge, face downward, and, momentarily, thought of my sad fate. Suddenly it dawned upon me that I was a young man full of life and vigor, and should not broo lover a little trouble like this; and, with a lightning movement, I sprang to my feet, and to the bees, placing them in the shade, and upon opening the hives, I found four out of eighteen colonies that were not entirely dead. I made up the combs into wax, and cleaned up the hives for future use.

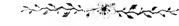
Two weeks later my horse was able to go home. My estimate of the cost of the disaster was \$120. By this time my beefever had cooled until my temperature registered but little above the normal.

Jan. 1st showed my assets to be seven colonies of bees, a few illy made second hand bee-hives, \$500 worth of experience, liabilities, \$150. So you see, after all, I had not done so badly. \$350 experi-

ence) and the bees ahead, against \$300 cash in hand the previous January.

Moral: Beginner, don't bite off more than you can chew.

WHARTON, Texas. Jan. 9, 1900.



EGENERATED BROOD, OR
"BLACK BROOD," ARISING FROM IMPERFECTLY
NOURISHED BROOD. BY

C. G. FERRIS.

As I live in the locality where is to be found the diseased brood which has attracted so much attention of late, it may be of some interest to you and to your readers to know my experience with it.

About fifteen years ago we commenced buying bees in an eastern locality. Almost every spring we took from 100 to 200 colonies from this particular section; leaving, as we did, only weak and inferior colonies "for seed," as we called it. After picking this section a few times there was a very noticeable deterioration of the bees; and, in every case, we were obliged to supersede the queen before any colony could be built up for honey gathering. The brood was scattering and · did not look right. The colony would about hold its own in strength; and vet, apparently, the brood was healthy, except the natural inherited loss of the vitality of the bees. The introduction of a good, healthy, Italian, or hybrid, young queen soon placed the colony in the front ranks with the best. I have been watching, for years, this brood of low vitality; and the remedy has always been a voung queen.

This last spring, in some black colonies that I bought the previous year, I was looking after the poor brood as usual, when I saw the first trace of what is now interesting all the country. We had a very plentiful flow from the apple and dandelion, and, during this time there was no trace of anything wrong. The bees were so busy, and honey so

plentiful, that cells were started for swarming; and, had this state of things continued, I do not think we would have known any thing about it for the past season, at least. To me it seemed, at the early stage, as though it was simply low vitality of the larvae, caused by scarcity of honey; and the results of the past season tends to show that when honey is coming in freely it apparently disappears.

It appears in all places as if wafted broadcast by the winds. It is not distributed the same as foul brood; apiaries apart, between which there has been no intercourse whatever, will show the same brood disease. I first thought that I had brought it from the East, and tried isolation. I had bought about twenty colonies a few miles from home, and it cropped out as freely in those as in any, as soon as the honey flow ceased. In the yard that I had isolated were a few pure blacks, and they had it worse than those mixed with Italian blood. In extracting I found a colony having a quantity of nice cells about to In each colony of blacks, that showed traces of diseased brood, I removed the old queen and introduced a cell. To my intense satisfaction, each one was received and allowed to hatch: and, upon preparing those for winter, I found good Italian stock, and all traces of the disease had disappeared. This was helped by the abundant flow of honey from the buckwheat: which probably encouraged the bees to overcome and clean it out for the time, perhaps.

It crops out the most prominent among weak colonies, and among the native blacks. Before the Italians came, in times of scarcity of food and I should call it a poverty disease. I suppose there is a bacilli back of it but it is not Bacillus Alvei. There is no foul brood about it. I was satisfied of that from the first. The same treatment will in no way answer for the two kinds. You may shake the bees off (which is a positive remedy for foul brood) and in a short time again you see the same disease (black brood) appear-

ing. It's in the air; it's everywhere—and the only hope we can have, so far as I can see, is to keep the colonies strong; and hope for another good, continuous honey year; when the bees may overcome or eradicate it.

Towards fall it attacks the imago form more; and in many cases the bees with black heads would be trying and working, much as an unhealthy chicken would in trying to work itself out of the egg, and finally would succeed in getting out of the cell. The past summer it has not affected the working force of my yards; many colonies showing no signs of it whatever; in no case enough to injure the working force of the colony. We will know more about it the coming summer; and, if my friends inform me rightly, Ferris will go out of the bee business for a time.

So. Columbia, N. Y. Feb. 18, 1900.



HE EXPERIMENT TO PROVE
THE AGE OF LARV.E CHOSEN FOR QUEENS. BY C. C.
MILLER.

The first thought that comes to me, Bro. Taylor, on reading your article on page 16, is that I heartily



wish that you might have been with me to help direct me in experimenting; and I sincerely hope you may do some experimenting yourself next summer. With your fine ability as an experimenter, and with your broad

experience in that line, you are likely to think of things that ordinary observers would ...ot. In my judgment it was a sad day for bee-keepers when you ceased to be a professional experimenter.

Instead of discussing the experiment I made, I should prefer to let the matter rest till next summer in the hope that several might give their attention to the problem, but your dictum in the matter will have a tendency to discourage experimenting in the same line, for you say that the experiment made makes it "normally certain that the doctor's opponents in the matter are in the right." When one skilled in experimenting and in drawing deductions therefrom makes such a decision as that, people are not likely to exert themselves very much to investigate the truth of a generally accepted tradition. So I will try to give some reasons why I do not see things exactly as you do.

You mention three omitted points that you think have an important bearing, asking the questions: "Did the colony have other combs without brood in the lower story? Were the experimental combs placed in the lower story or left in the super? In what order were they arranged?" In reply, I may say that, so far as I have observed, in this locality, if the bees of a colony have no other brood it doesn't matter whether the five frames of broad are in the first or second story; where the brood is, there the bees will be assembled in sufficient numbers to care I don't see that the first two questions have any bearing on the case. The third question has in my opinion no bearing either; but as you attach importance to it I will answer that they were arranged as you supposed, in alphabetical order.

You exhibit the number of cells in the combs in this way:

Comb a — o cells.

" b — 5 cells.
" c — 17 "
" d — 8 "

and call attention to the large number in the central comb. But you do not call attention to the fact that comb c was left with the laying queen for the deposition of eggs (as was told in my article) a much longer time than either of the other combs. And I noted that when a fresh comb was given for a queen to lay in, she would lay more eggs in it during the last half of the 24 or 48 hours than during the first half, so it is not hard to understand that c in 42 hours could have more than twice as many eggs as b in 26 or d in 24 hours.

July 8, a queen cell was found on comb d while larvie less than three days old were in comb c. (A typographical error says this was the first queen cell on comb b, but what preceeds and follows shows it was d.) In that case there was certainly no preference for the central comb. July 12, queen cells were found on comb e while larvie less than five days old were in comb d. If the bees preferred too-old larvie, why didn't they take those in d, instead of going to the outside comb?

The bees were not compelled to build on b the three cells found July 7, for they could and did build on c before and The same thing is true of the three cells found on d July 10, nately I have had the opportunity to refer the question to one of exceptionally large experience in looking for queencells, one who as many as a thousand times in a season goes through the operation of searching through a hive for them. The reply was in substance as follows: "I don't think it's so much the position of a comb as other things, For post-constructed cells the bees seem to prefer new combs, and if such are in the hive they'll find them, no matter where they may be For pre-constructed cells the preference is for a comb with some irregularity or one with holes in it. found such a comb next to the outside comb with a dozen cells on it and scarcely a cell elsewhere in the hive. Not so often are cells found on the outside combs; not, I suppose, beause they are outside, but because they are so often filled with pollen and honey with no brood. And yet I very often find cells on the outside combs. I remember one case the past season where I found a cell on the

comb next to the outside, and not another cell in the hive, although I could see no reason why they might not as well been on the other combs."

Other faulty reasoning I might mention, but it is hardly worth while. said in the article in Gleanings: "I know very well that this is only a single case, and that the next case might be different, for 'bees never do anything invariably.' " So it is well to let the matter rest till next June, and by that time possibly other experiments may be made. Taylor, please stop throwing stones at my imperfect attempt at experimenting, and with your well tested experience as an experimenter submit the question to your bees and see what they will say. I only wish that Taylor the critic had the same fairness I have always credited to Taylor the experimenter. So long as the readers of the Review had not before them the article you were criticising, it seems to me you should, in all fairness, have told some things you did not tell.

Let me try in a few words to tell the result of the experiment. In a great measure, data were not sufficiently exact to know whether larvae for queen-cells were chosen when more or less than three days old. In the cases that could be determined, none of them fell on the side of being under the age limit. To be more exact it is shown that 16 cells on comb c and one on comb d were started over larvæ less than three days old. your readers had not my article before them, it would have been nothing more than fair for you to have said, "There is no positive proof that during the first five days any larvae more than three days old was chosen, and there is positive proof that 17 larvæ under three days old were chosen." Possibly, however, this did not occur to you.

Turning to page 22, the editor mentions a point that might have considerable bearing, "the smoothness of the combs and their age." I may say that so far as I could judge the combs were alike, all smooth, and of the same age. None of

the cells were started on an edge or irregularity of a comb.

In support of the theory, you say Mr. Editor, "If bees are given larvæ of an ages from which to rear queens, some of these will be almost worthless." I don't dispute that for a minute—have proved it time and time again—not only "almost worthless," but worse than worthless. I've said so repeatedly, and not long ago repeated it for your special benefit.

You also say, "If they are given larvæ all of one age, and that a suitable age, all of the queens will be good queens. If there is any one thing about queenrearing that I know, this is one of them." Now let me say something that I also know. I have given to queenless bees "larvæ all of one age, and that a suitable age," and some of the resulting queens were good and some were worthless.

You say you are willing to consider a more reasonable theory. I submit this: Queenless bees, as a rule, prefer larvæ under three days old: when such are no longer present they start fool-cells.

Marengo, Ill., Feb. 19, 1900.

[At last we have these two old veterans engaged in the discussion of a practical subject, but I wish to get this discussion finished up as soon as possible, and, for this reason, I sent proof of the above to Mr. Taylor, who replied as follows.—Ed. Review.]

Friend Miller, I should have liked very much to have been present with you to assist in the experiment—I should have had lots of fun with you.

I trust your fear that I made some statement calculated to discourage further experiment in the matter is unfounded. I made no claim of any positive proof, even in the one case, much less as a general rule; and I have a pretty clear recollection that I made some suggestions looking to further experiments in the future.

I am sorry you did not answer all the questions I propounded on the "omitted points." You mention some, but I think not all—especially the one as to the

strength of the colony—and answer only the one as to the arrangement of the combs. If all these questions were answered, some of them would, I doubt not, appear to be very important. For instance, I infer, rather from what you neglect to say, than from what you do say, that the five combs were left hanging alone in the super. Do you think that is of no importance?

. You say in your discussion of the question concerning the arrangement of the combs that I did not call attention to the fact that comb c was left with the queen for the deposition of eggs a much longer time than either of the others. it not be doctor, that you think me unfair, sometimes, because you fail either to read or to remember all that I write? you will peruse my article carefully you will find that I stated, in substance, that c was left in with the laving queen two days; and the same fact appears, evidently, in no less than four places in the table I submitted; though, by what I afterwards learned to be a typographical error in your article, I was led into the error of giving ealike excess of time; an error which, as it happened, was of no great importance. But I am not as yet able to see any force in your argument founded on the length of time c was left with the laving queen. No one, I am sure, in his right mind, would claim that bees build queen cells on combs in numbers proportioned to the number of larvæ they severally contain; besides we do not know that c contained more larvae than b. And, as to your argument in the next paragraph, from the fact that a cell was found on d while larvæ less than three days old were in comb c, no one would claim that there were no exceptions to the bees' general rule of action, I nowhere claimed that all cells would be built on the central combs. but that such combs had the preference, just as my exhibit, which you copy, shows. Now, be candid, doctor, do you seriously claim that bees have no preference for the central combs for the building of queen-cells.

But your strong reliance is the answer of your friend of exceptionally large experience. I am somewhat out of patience with you that you should be willing to give the substance of his reply rather than its tenor or exact text—one is so liable. when concerned in an argument, to overlook what might be material to the argument of the other side. But we must take what you have given us; and, as to that, we are not now concerned as to the soundness of your friend's propositions. but only as to their bearing upon the present point, whether bees have a preference for the more central combs for queen rearing. After considering the matter as fairly as I can, I am bound, in justice to myself, at the risk of encountering another charge of unfairness, to say that the "substance" of your friend's reply has no application in any particu-It says: "It's not so much the position of the comb as other things." What things? Why, a variety of combs, so that there may be a choice by the bees among them; new combs, and old combs, and irregular combs. But your combs, doctor, we have the best of authority for saying, were alike; all smooth, and of the same Ask your friend: If the "other things" were absent, as was the case with your combs, what about the position? Have you any doubt about what the substance of his reply would be? As to the rest of the reply, I am sure you could not claim that it contains anything but a number of exceptions; and what we want is a general rule; and your friend, so far as appears, does not attempt to give any applicable to the present case.

Passing this point you go on to say: "Other faulty reasoning I might mention." Other than what, doctor? That implies that some point in my reasoning has been found faulty. I suppose you mean in the question I have just been discussing; and we shall know whether you really think so or not when we learn whether, in your next experiment in the matter, you use just the five combs as you did in your last, or whether you

change the plan. And, as to the other faulty reasoning, I should be thankful to have you point it out—if only to barely mention it; for I have no mercy on myself for faults of that kind.

At length you proceed to tell the results of the experiment, and affirm that it would have been nothing more than fair for me "to have said, 'There is no positive proof that during the first five days any larvæ more than three days old were chosen, and there is positive proof that 17 larvæ under three days old were chosen.' Possibly, however, this did not occur to you." Don't you think you are a little unreasonable in expecting me to state thoughts in the same language you would use, or would like me to use? stated it in other language, and set it forth very definitely in the table. My greatest struggle is to get much in little space, and I expect my readers to take a comprehensive view of my treatment of This style, to which I am a matter. apparently compelled, may be partly to blame for my seeming to you curt and unfair. Moreover, it possibly did not octo you that this was not the point in issue; indeed, it is rather an unimportant sideissue; as it clears nothing up. The main point in discussion was your claim that "If the combs with the cells be taken within the first five days [of queenlessness] and put in the upper story of a colony having a laving queen there will be no too old larvæ in the case." you say what I ought to have said, I may make free to point out that you have entirely overlooked your main proposition. You must still have some opinion about it, and, for a brief discussion of it, from your pen, we could well forego arguments on the subsidiary and comparatively unimportant points. Perhaps you meant to offer your telling the results already referred to as a substitute: if so, it is well.

Accept my thanks for your, I fear, too high opinion of my abilities as an experimentor.

LAPEER, Mich., Feb. 22, 1900.



CONDUCTED BY R. L. TAYLOR.

The best critics are they Who, with what they gainsay, Offer another and better way.

ESTIMATING THE AMOUNT OF STORES
IN THE FALL, AND SUPPLYING
ANY DEFICIENCY.

For the sake of not losing a chance of a quarrel with Doolittle, I refer to one more item in last year's journals. (American Bee Journal, 709.) There Mr. Doolittle, in an article on the preparation of bees for winter, says: "To be sure that all have the desired amount of stores, there is only one certain way to do, and that is to open the hives and take out each frame and weigh it after having shaken the bees off. Next weigh a frame of empty comb, or several of them, so as to know the average weight, which, when deducted from those in the hive, will give the weight of honey, note being made in all cases of the amount of pollen the combs contain, their age etc., and the necessary allowance being made accordingly. "

Over against this plan he puts the one which he condemns in this language: "Not long ago I saw it advised to put into an empty hive the number of combs used in wintering, and weigh the hive so arranged, when the hives in the apiary were to be weighed, the amount of the other deducted, and, if there was 50 pounds left above this deduction, there would be sufficient stores in that hive for wintering on the summer stands, and if there was 15 pounds it would do very well for cellar wintering." Then he proceeds to make upon this plan the following comments: "No one could make any mistake in calling such a method a careless procedure. . . . Hives subject to the weather weigh more than dry hives do that are liable to be taken from the store-room; colonies of bees differ very much as to size and weight; old combs weigh double that of new ones; combs from a colony which was queenless for some time during the summer will often contain pollen to one half of the amount allowed for cellar-wintering; hence these and other factors make that method of procedure httle better than guesswork."

I agree with him in his subsequent statement that " the amount named is too little by far. " I have known colonies wintered indoors, which did not winter very well, on account of the inferior qualities of their stores, use 15 pounds and more before they were taken out in the spring; so the amount named would not always be enough to carry them over the winter; much less, to supply them with the abundance so necessary to their wellbeing in the spring when brood rearing should be pushing with the greatest fer-There is no economy in allowing the bees just enough stores to last them over the winter; much less is there economy in putting one's self to a large amount of disagreeable labor to secure the provision of a bare sufficiency.

As a rule, for wintering purposes, bees should be allowed not less than twice enough to carry them safely over an ordinarily trying winter. No doubt Doolittle would assent to this proposition, for he teaches that each colony should be provided with 25 pounds of honey. Though I had, one winter, a few colonies each consume 15 pounds or more of stores -about 18 pounds being the greatest I have known in a single case—vet 25 lb. is considerably more than twice the average consumption of my colonies up to the time of removal from the cellar. It follows from these rules that there is absolutely no call for any close calculation in order to determine the amount to be provided each colony. Sufficient is too little-there must be enough. Determining the amount to the fraction of a

pound involves the tearing up of every brood nest in the apiary—an operation, the question of the labor necessary, aside, which is not to be encouraged. In the hands of a Doolittle the damage might be little or none, but on account of a probable ill-arrangement of combs, and delay till an unseasonable time, there would not, in many cases be any security against ill results. There is nothing in the varying weights of hives and combs to prevent the giving of enough to each colony without either the breaking up of brood nests or the allowing of an injuriously great quantity of stores. By this course, i c., the weighing of colonies instead of combs. the examination of the brood combs may be deferred until spring, with the greatest certainty of safety, so far as the amount of stores is concerned, when the ordinary examinations that must be made in any event will determine the colonies requiring additional stores.

Evidently Doolittle appreciates, to some extent, the magnitude of the work he lays out for his pupils, for he "hears some one say 'It would be a fearful job to shake the bees off from every comb in a colony and weigh each comb separately, ''' and grants that it would be if done with each colony; a course which he nevertheless thinks would pay in the long run; but goes on to make the concession that "you will have to do this with only two or three till you get the right conception of just how much honey there is in each frame by simply lifting it from the hive and looking at it, when you can count off the number of pounds almost to a certainty and do it as rapidly as you can handle the frames," till I begin to wonder whether the guesswork he employs is better than the guesswork he condemns. With the majority of persons I should prefer that which he condemns. Again, I fear he estimates the "fearful job" by his own measure. There are other conditions that make a difference besides locality. Not every one can endure 15 hours of hard labor a day. Some that could, deem it unwise to do so; and some that could

and would, could easily find more profitable employment than going through every colony in a considerable apiary, guessing at the weight of honey in each comb; and others still are born with enough of the tired feeling to decide them to choose "inner lines" even if there is a little risk in it. But in this case there would be no more risk.

The plan, then, which Doolittle condemns as a "careless procedure," is a good one; indeed, with single-wall hives that may be readily handled, it is undoubtedly the best. I proceed in this way: My hive with empty combs weighs, say, 18 pounds, and, allowing 7 pounds as the weight of bees and bee-bread, which makes 25 pounds, and adding to that the weight of the necessary amount, of honey, 25 pounds, I have 50 pounds as the weight necessary for each full colony to put it in good condition for winter, so far as stores are concerned. I now weigh a few colonies till I find one that weighs the 50 pounds required. This hive I "heft," carefully, till I have a good conception of its weight, and, if I lose that conception, I come back and lift it again. Having a good idea of this weight, I go rapidly over the apiary, lifting each colony just clear of the ground, always taking the same position in the operation, and marking with an apple or a pebble each one that is doubtful or too light. If there has been the usual light fall honev-flow, most of the colonies will be over 50 pounds in weight, some running to 70 and 75 pounds, and all such require scarcely more than a touch to determine satisfactory condition. I then weigh each of the doubtful and too light ones, placing the scales on an adjacent hive for that purpose, and mark the weight on the same part of each hive. After the weights are determined, it only remains to put the light ones in condition for winter by uniting, by supplying them with the needed combs of honey, or with sugar syrup.

In a subsequent paragraph, in giving directions for making syrup for the nec-

essary feeding, Doolittle advises the addition of about 10 per cent. of extracted honey to the syrup to prevent crystallizing, and says he should have the honey if he had to send to another State for it, and give an extra price. For myself I should not use either acid or honey; for I have found 'no necessity for either of I am inclined to think that the trouble from crystallizing comes from agitating it by stirring to cool it or otherwise after it is sufficiently heated, thus admitting the air to it. I make the syrup in a large vessel, on the stove, being careful to use light fuel towards the completion of the batch, and when done leave it undisturbed on the stove to cool, and have yet to feel the need of either honey or acid

LAPEER, Mich , Feb. 22, 1900.



"All things co ne to him who waits; " But here's a rule that's slicker,

The man who goes for what he wants, Will get there all the quicker.

T. F. BINGHAM has sent me one of his brass, smoke-engines. It is the finest thing in the smoker line that I have ever seen.

COMBS that have continued brood give honey a darker color, was the report of Edward Ochsner at the Wisconsin convention, but he stood alone in this belief.

OFFICERS elected at the Wisconsin State Bee-Keepers' Association are as follows: President, N. E. France, Platteville; Vice President, J. Huffman, Monroe; Secretary, Miss Ada L. Pickard, Richland Center; Treasurer, Harry Lathrop, Browntown,

THE ACCARTNEY SECTION PRESS AND FOUNDATION FASTENER.

One of the most interesting exhibits at the Wisconsin convention was the section press and foundation fastener of Geo. Mc Cartney, of Rockford, Ills, It is illustrated on this page. It is very simple in construction. Pressing one treadle puts the section firmly together. Press-

ing the other treadle shoves forward a strip of foundation. cuts a piece off the desired length and firmly fastens it in the section. It is not necessary to cut up the foundation. the machine does that, and it can be fed into the machine in long strips. The machine can be easily set to cut off any length of foundation. In my opinion it is the best combined machine that has come to my notice. The only thing that will pre-



FASTENER.

vent it from coming into general use, is \$5,00 ; but when there is the price much work to be done, it would be true economy to own a machine.

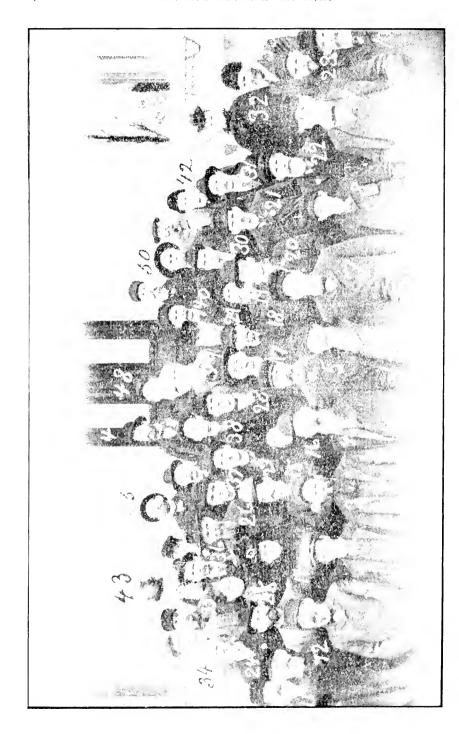
Aug. Weiss, of Hortonville, Wisconsin, in sending out to his customers a novel calendar—one good for 200 years. Drop him a postal, if you care for one,

W. L. COGGSHALL AND HIS LIGHTNING OPERATORS.

Gleanings gives a good picture of W. L. Coggshall and nearly a page description of Mr. Coggshall, his methods, and the men who have worked with him. Mr. Cogshall owns somewhere about 1200 colonies of bees, scattered about in ten different yards; the furthest one being

> about 40 miles from home. Mr. Coggshall and his helpers drive to one of these vards, carrying barrels and kegs with them. There is an extractor and extracting house at each yard. The men put on armor-proof bee-suits. because no ordinary sting-proof clothing would answer. They then go to work in a lightning style. Covers are kicked off because it is The anicker. smoke is driven down between the frames, the

combs jerked out, and the bees jerked off the combs. Everything is done by a quick short-cut method. Mr. Coggshall places locality first, the man next -- hives last. While the majority of us would not feel like adopting all of his methods, there is no denying the fact that he has made money out of bees in spite of the stings, robbing and home-made equipments that he has made for himself.



A PICTURE OF THE MEMBERS OF THE WIS. BEE-KEEPERS' ASSOCIATION.

When over at Madison attending the meeting of the State Bee Keepers' Association, I took a photograph of the members as they gathered in a group upon the step of the capitol building. I have reproduced it in half tone, and show it upon the opposite page. So far as 1 have been able to learn the names of the members, they are as follows:

i, G. W. Wilson, Kickapoo, Wis Otto Sandum, Browntown Wis

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F. White, Belmont Wis
        Jas Foracrook, Watertown, Wis.
        G. A. Cressey, Hilbert Jameton, Wis.
J. W. VanAlien, Haney, Wis
Carl Dayis, Madison, Wis
9. L. Highbarger, Leaf River, Ills.
10, Geo. McCartney, Rockford, Ills
11, Ed. Ochsner, Parne da Sac. W
                                                                                                   Wis
12, B. Davenport, Aurothville, Wis.
12, B. Davenport, Aurochville, Wis. 13, H. Lathrop, Browntown, Wis. 14, Miss Ada L. Pickaed, Richland Center, Wis. 15, G. W. York, Chicago, Ills, 16 Mrs. W. J. cickard, Richland Center, Wis. 16, Jas. Matthew, Auroradvelle, Wis. 21, Jacob Huffman, Monroe, Wis. 22, F. L. Murray, Calam ne. Wis. 21, Herman Gloege, Monroe, Wis.
22, F. L. Murray, Calam ne, Wis-
24, Herman Gloege, Monton Wis,
28, Mrs. F. Wilcox, Manston, Wis,
26, Gustave Cross, Milford, Wis,
27, C. E. Smith, Seath Wayne, Wis,
34, E. M. Hayes, Kilbourne, Wis,
35, H. P. Miner, Retreat, W. S.
36, Ang Weiss, Hortenville, Wis-
37, A. Vandereke, Luke Mills, Wis-
37, A. Vandereke, Luke Mills, Wis-
38, C. A. Utagh, Reinland, earler W.
  38, C. A. Hatch, Richland Conter, Wis. 30, F. Wilcox, Readstown, Vis.
  40, A.G. Wilson, Readstown, Wis.
   H. John Tewle, Brooklyn, W.

16. John Lewic, Blooklyff, W.S.
12. H. H. Porter, Baraboo, Wis.
15. Key, H. Rolits, Clinton W.S.
17. N. E. France, Platfeville, Wis.
18. Rev. H. A. Winters, Meassen, Wis.
19. H. Ballow, Peebles, Wis.
19. M. Whend, Last well, Wi.
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Concerning this picture, Secretary N. E. France writes as follows:—

50. Jas. McMurdo, Hortonville, Wis.

This group shows some of the greatest producers, in the United States, of Ironey, comb foundation, hives, sections and queen Les; the first State Inspector of apiaries; N. E. France the greatest lady bee-keepers in America; Mrs. and Miss Pickard a former President of the State Association for ten years, later a President of the California Bcc Keepers' Society and Vice President of the National Associations: C. A. Hatch mother who has served ten years as President of the State Society, been in charge of the Wisconsin honey exhabit af the World's Fair, and judge of the apiarian Department at the last State Tair of F. Wilcox ;

one man who manufactures from 40,000 to 50,000 pounds of comb foundation, each year, in long sheets and cut to any size desired (Ang. Weiss); the inventor of a valuable machine for putting together sections and putting in foundation (Geo. McCartney). This picture also shows the first State Bee-Keepers' Association the members of which joined the National Association in a body, and will be in attendance in Chicago, at its next meeting.

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THE BROOD-NEST AT THE OPENING OF THE HONEY HARVEST.

At the last meeting of the Wisconsin State Bee-Keepers' Association. A. Hatch argued for ten-frame broodnests in the spring, in order to rear all of the bees possible. At the opening of the honey harvest he would have every comb fuil of brood, in a colony to be run for comb honey, even if he had to rob some other colonies to do this. would place the unscaled brood at the outside of the broad nest. This prevents the filling of the outside combs with honev; as the harvest (from basswood) is over before the brood has hatched from the outside combs. The center of the brood-nest will not be filled with honey. In a debate between Harry Lathrop and Jacob Huffman, upon spring-management, the former advocated that all colonies for the production of comb honey be populous, even at the expense of weaker colonies, by robbing the latter of some of their brood if necessary. He believed in concentration instead of equalization.

. WISCONSIN BEE-KELPERS THE FIRST TO JOIN THE NATIONAL ASSOCIATION.

One of the late changes in the constitution of the National Bee-Keepers Association allows any association, the annual dues of which are \$1.00, to join by the payment of 50 cents for each member; thus, 50 cents goes to the local association, and 50 cents goes to the National, thereby increasing its funds and membership. Wisconsin bee-keepers are the first to avail themselves of this privilege. Let other associations follow their example. There is often an advantage even in numbers. When our representative, be he delegate, attorney, or manager, can say: "I represent an organization of 1000 beekeepers!" it has weight.

BARRELS VERSUS TIN CANS.

As the result of a paper read by Bro. York, at the recent State meeting of the

when a barrel "loses its head." There is no loss from "soakage" as is sometimes the case with wooden packages. It is easy to liquefy the contents. The greatest objection to tin cans is the expense. A barrel holding 350 lbs. can be bought for 80 cts. The same amount of honey put up in tin calls for an outlay of about \$2.25 for packages. In shipping a large crop of honey this is a big item. Barrels are more easily handled, as they can be rolled, while cans must be lifted, and

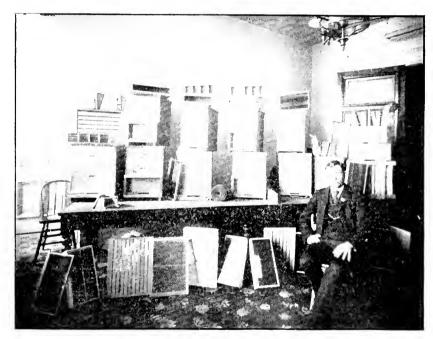


EXHIBIT OF AUG. WEISS AT THE WISCONSIN STATE CONVENTION.

Wisconsin bee-keepers, at Madison, there was a spirited discussion regarding the merits of a barrel, compared with a jacketed tin can, as a package for shipping extracted honey. The conclusions might be summed as follows: For retailing honey, selling it to grocers, and the like, cans possess advantages. They seldom leak, unless carelessly punctured by a nail when nailing on the jacket. If a can does leak, or meet with an accident, the loss is slight compared to what occurs

carried, or else shoved. Manufacturers, and others using honey in large quanties, usually prefer it in barrels; as they have arrangements for handling it to advantage in such packages, and they wish to avoid the expense of the tin packages. Care is needed in securing the right kind of barrels - that they are made by a man who understands the business. When it was proposed to wax the barrels, the reply was: "Wax your cooper, instead of your barrels." However, this matter of

waxing the barrels, or rather of coating them on the inside with paraffine, is worthy of consideration if, as some asserted, a barrel will absorb from 5 to 10 pounds of honey, which must be lost by the producer. A barrel can be coated on the inside with paraffine at a cost of 10 cents—much less, if there is any way of heating the barrel.

THE VALUE OF BEES to the fruit grower and the horticulturist—have become recognized to such an extent—that, at the last meeting of Wisconsin—bee-keepers, one of the horticulturists, who owned extensive orchards, came into the room and offered a site for an apiary, free, to any bee-keeper who would establish an apiary upon it.

WISCONSIN has a very flourishing beekeepers' Association. At the recent meeting held in Madison there were 75 in attendance. The annual meeting is held at the same time and place as the horticulturists and cheese makers hold their conventions, and in this way reduced rates are assured. Here is a hint for the societies of other States.

ARTICLES WANTED ON QUEEN REARING.

The May Review is to be a special number on queen rearing, and I should be glad of some articles on the subject. briefly over the subject, beginning with preparing the colony for cell-building, securing the eggs or larvae, starting the cells, caring for them, starting nuclei, introducing virgin queens, or putting in cells, caging and mailing the queens, giving all of the little hints that you can. Also give a few hints that will help the man who simply wishes to rear a few queens for his own use. For the best article on the subject, received before April 15th I will pay \$5.00 cash. For any other article on the subject, except the prize article, that I think well enough of to print, I will advance the subscription of the writer one year and send him a queen of that Superior Stock,

COMPENSATION FOR FOUL BROODY COL-ONIES THAT ARE DESTROYED.

In his last report, N. E. France, State Inspector for Wisconsin, recommended that the foul brood law be so changed as to allow the owners of foul broody colonies to receive some compensation for their loss in getting rid of the disease. At the recent meeting of bee-keepers, at Madison, resolutions were passed favoring this change; and the matter will be brought before the next legislature.

In ridding an apiary of foul brood there is not, of course, a total loss; as neither the bees nor the hives are destroyed. I suppose that even the honey may also be extracted and the combs rendered into wax, but many advise against this, because so much care is needed, and so much carelessness is abroad in the land.

If the State will be reven a part of the loss incurred in ridding an apiary of foul brood, it will greatly lessen the opposition with which the Inspector has to contend.

EXTRACTED.

CALIFORNIA'S HONEY RESOURCES.

Their Past, Present and Future.

California is a great honey-country, but it has its disadvantages. J. H. Martin, in Gleanings, has an article in which the real situation in California is set forth more perfectly and fully than has been done before. From that article 1 make the following extracts:—

During the nine years I have been in Southern California, four of them have been total failures in honey production, while two others have been a partial success, leaving three good years in nine. Therefore, taking the average production during these nine years, I have come to the conclusion that in a series of years California will make no better showing than some of the Eastern States. There is not much comfort in that for those who

wish to come here to embark in the bee business; but let us make a few comparisions, review a little of the past, look at the present, and deal a little in futures.

The production of honey in California commenced in the Sacramento Vallay, in the Northern portion of the State. As the resources of the State became more generally known it was found that the Southern end was far the best for honey, both in quality and quantity, and in that portion the industry has reached its greatest development, and the honey produced in the seven southernmost counties will ever hold the reputation gained for quality; for in no portion of the State is there the amount of various sages that are found here; and while the valleys have been out under cultivation, and the sages destroyed, the canyons and mountain sides are still its home, and there will always be very good pasturage, for the land can be used for no other purpose.

It is in this portion of the State where those phenomenally large yields have been produced; but we can refer to them only as phenomenal, for they seldom occur twice in the same locality. These phenomenal yields have always been within the sage belt, and from that source; and it is safe to say that, in the production of quanties of pure sage honey, California has seen its best days—but not its best days in the production of honey

mind you.

That the honey resources of California are changing, and will increase to greater proportions than ever, can be easily demonstrated in Central California. this portion of the State, where a few years ago the land was so barren that, upon hundreds of square miles, a bee could not live, there are now thriving farms and thousands of acres of alfalfa. Irrigation has made this great change. This area of alfalfa is now confined in a great measure to locations not at a great distance from the railroads. Outside of this area are thousands of square miles vet to be populated and brought under cultivation, and it is safe to say that alfalfa will be one of the principal crops.

We never hear of phenomenally large yields of honey in Central California, but they are blessed with something better—no total failures. The honey yield fluctuates more or less, as it does in all locations; but there is a reasonably sure income from the apiary every year; and the carloads of honey from Central California, which are already numerous, will steadily increase. In the eastern portion of the middle of the State we find Owens Riyer Valley not of great size. It is hem-

med in by immense mountains, and here the bee-keeper produces alfalfa honey of the finest quality. Owing to location, or some other cause, the honey is of lighter shade than honey from the same source in other parties of the State.

in other portions of the State. The development of the honey resources in Northern California has not kept up with the development in the south. It is a mountainous country; and in those portions where honey can be produced, the cost of transportation to market eats too much into the profits to make it a paying business at the present prices of honey. It is safe to say that there is an area in Northern California equal to the area of New York State where there is not a carload of honey shipped; and where it is produced it is sold in the limited home market. It costs as much to ship honey from the Oregon line to San Francisco (a little over 300 miles) as it does from San Francisco to New York. There is a future, however, for Northern California honey production. With more and competing lines of transportation, more settlement of the waste places, and more alfalfa, carloads will begin to move out. Many of our prominent bee-keepers, even in, Southern California, see in alfalfa the great and permanent honey-plant of the future.

This great forage plant is in direct accord with the interests of every agricultural community. Alfalfa first, cattle next, then the flowing of milk and honey, typical of the highest prosperity of a State.

California is justly noted for its immense fruit industry, and much has been said about this source of honey. However, it cuts but a small figure. The time of bloom is of short duration, and the secretion of honey not abundant. The orange-bloom, where the trees are abundant, gives a fair surplus; but it would not pay for the beekeeper to depend wholly upon this source alone for his living.

At present the best locations for success in honey production in California are found all the way from the Sacramento Valley to San Diego; and the bee-keeper who intends to move to this State should write to the Chambers of Commerce in San Francisco and Los Angeles for literature giving much information about the respective ends of the State. In fact, it would be a good plan for almost anybody who would like to know more of the resources of this great State to send for this literature.

Then it would be a good plan for the emigrant, when he arrives, to take time to look the ground over. Ride by rail

and wheel through the central part of the State. The largest alfalfa districts are between Presno and Bakersfield. Two weeks' time could be profitably spent in Southern California; for you can see, by referring to the map, that the great State of Ohio covers only about half of this end of California.

When a location is selected it is of the utmost importance that the occupant of it make up his mind to like his new home, and land it to the skies upon any and all occasions. That is always the first duty of true Californians.

SPRING MANAGEMENT OF BEES.

The Importance of Securing Large Colonies for the Harvest.

One of the greatest secrets of successful honey production is that of having a great force of field-workers during the honey harvest. After the harvest has passed and gone, the workers are useless consumers. No stone should be left unturned in securing the desired bees at the proper time. Spring management will soon be the order of the day, and has much to do with the securing of these workers, hence I take pleasure in copying, from the Wisconsin Agriculturist, some excellent hints on this subject from that old veteran, Harry Lathrop, of Browntown, Wisconsin.

A proper understanding of bee culture and the honey sources of our locality will convince any one that the most important object in view, from the time one honey harvest closes until another begins, is the securing of strong colonies at the proper time. Those last four words mean a great deal to the bee-keeper. A colony of bees that gets into shape for work only at or near the close of the main honey flow becomes a consumer instead of a producer. The ideal condition is to have the colonies vigorous and populous at the beginning of the honey season and get them well started to work in the surplus department before the swarming fever strikes them. Often then, by giving more room at just the right time, the colonies may be kept so busily at work storing honey that they will forget all about swarming. This will

save work for the bee-keeper whose object is honey, and who does not wish increase. But how to get the colonies into the proper condition in time is the important thing. If a colony of bees comes out of winter quarters in prime condition and well supplied with honey they may build up to the required standard without any aid from the apiarist, but many colonies will lack in some essential point that must be corrected or supplied.

Early examination of bees to the extent of opening the broad nest should not be done on cold, raw days. Select the warmpart of a bright suushiny day; find out the actual condition as near as possible of each hive, and make a record of it, showing their requirements. Careful attention to these special needs during the weeks that intervene between the time of placing the bees out and the beginning of the honey harvest is the work that pays the bee-keeper Some colonies will need one thing and some another. Some will need more feed, which may be supplied by inserting a comb of honey from the brood chamber of some colony that can spare it. One of the first things to be done is to make all colonies as warm and tight on top as possible. One of my methods, where wooden honey-boards are in use, is to place two or three thicknesses of newspaper over the honey-board and press the cover down over all. prevents the escape of warm air. Later, when brood rearing has been in progress some time and some colonies are strong, occasionally a frame of brood nearly ready to hatch may be taken from a strong one that can spare it and given to a weaker one, thus tending to equalize the colonies. Brood spreading may be practiced, but requires great care, and should not be done unless the weather is warm and favorable. If a comb on the outside of the cluster, containing only a few eggs, is placed directly in the center and the well filled one from the center put in its place, the operation will increase the egg laving of the queen and help to bring about the condition we are working for, viz, all combs filled with brood and eggs at the beginning of the honey harvest. Another thing should be looked after; if the colony has too much honey, or if early honey comes in so rapidly as to cause the combs to be filled before the queen occupies them with eggs, this honey must be removed or the colony will be weakened through the restriction of brood rearing. This honey can often be used to supply colonies that are short and need more honey than they have.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoited by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

CHICAGO, III.—At present the demand for honey is somewhat slow, but we anticipate more inquiry and better prices. We quote as follows: Fancy white, 15; white, 13; amber, 12; dark, 10; white, extracted, 8 to 9; amber, 7 to 8, becswax, 28.

Jan. 23.

S. T. FISH & CO., 189 So. Water St., Chicago, Ills.

NEW YORK.—Stocks of comb honey are very light, and we could use some to good advantage. We quote as follows: Fancy white, 15; No. 1 white 13 to 14; Iancy amber, 12 to 13; No. 1 amber, 11 to 12; Iancy dark, 11; No. 1 dark, 10; white, extracted, 8½; amber 7½; dark, 6; becswax, 27 to 28.

Dec. 22,

HILDRETH & SEGELKEN.
120 West Broadway, New York.

BUFFALO, N. Y.—Fancy comb honey is in great demand; and all grades move well. Two thirds value advanced on arrival when desired. Please write us. We quote as follows: Fancy white, 16 to 17; No. 1 white, 15 to 16; fancy amber 12½ to 14; No. 1 amber, 10 to 11; fancy dark, 0 to 10; No. 1 dark, 8 to 9; white, extracted, 7 to 8; amber, 5½ to 6; dark, 5; beeswax, 28 to 30.

Jan. 23. 167 & 169 Scott St., Buffalo, N. Y.

NEW YORK, N. Y.—There is a steady demand for all grades of comb honey. The receipts are not heavy. We quote as follows: Fancy white, 15 to 16; No. 1 white, 15 to 14½ amber, 11 to 12; buckwheat o to 11. Extracted honey is steady at the following prices: California white, 8½ to 9; light amber, 8 to 8½ white clover, 8½ (amber, 7½) We are asking, for extracted buckwheat, 6½ to 7 cts, for kegs, and 7 to 7½ for tins, according to quality, but with very little trade. Florida extracted honey, 8 to 8½ amber, 7 to 7½, to 8½ amber, 7 to 7½. Other grades of Southern at from 25 to 8% cts, per gallon, according to quality. Beeswax, a little more active at from 27 to 28 per

Jan. 11. FRANCIS H. LFGGETT & CO. W. Broadway, Franklin & Varick Sts KANSAS CITY.—We quote as follows: No. 1. white, 14; No. 2 white, 13; No. 1. amber, 13; dark, $12^{1}z_1$ extracted, white, $7/z_1$ to 8; amber, 7 to $7/z_1$ dark, 5 to $5/z_2$; beeswax, 22.

C. C. CLEMONS CO., Dec. 26. 423 Walnut St., Kansas City, Mo.

BUFFALO. N. Y.—There is very little new honey in the market, and the demand is very good. We quote as follows: Fancy white, 15 to 16; No. 1 white, 14 to 15; fancy amber, 13 to 14; No. 1 amber, 12 to 13; fancy dark, 11 to 12; No. 1 dark, 10 to 11; white, extracted, 8 to 8 l₂; dark, 7 to 7 l₂; amber, 7 l₂ to 8; beeswax 28 to 30.

W. C. TOWNSEND, 86 West Market St., Buffalo, N. Y.

CHICAGO, H.L.—We quote best white comh at fifteen cents. An occasional small lot of fancy sells at sixteen; off grades of white, twelve to fourteen cents; ambers ten to twelve cents. Extracted, eight to nine cents for fancy white, seven to eight cents for amber, six to seven cents for dark grades. Beeswax twen-y-seven cents. Receipts are larger and the demand is not as good as it has been.

Jan. 8.

R. A. BURNETT & Co., 163 So. Water St., Chicago, Ill.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

3-99-tf

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.



The A B C— Bee Culture.

Read what Dr. C. C. Miller says in the National Stockman:—

" Not a bad index of the advancement of bee culture in this country is the fact that besides two or three other good books on bee-keeping, the A B C of Bee Culture has been so extensively used that it has reached its 67th thousand. The name is rather a misnomer, suggesting as it does a small primer for children. Instead of that it is the most comprehensive work in the English language pertaining to bees, and a more appropriate name would be The Encyclopedia of Bee Culture. It contains 437 pages measuring 912 by 614 inches each. It is profusely illustrated with fine pictures, many of them full page, and is printed on elegant paper in clear type that is a delight to the eve.

It was first written by A. I. Root something more than twenty years ago, but bee-culture is not a science that is at a stand-still, so during all these years the book is kept standing in type, and with every advance in bee culture there has been a change in type, so that the book, now double its original size, is just a little in the condition of a boy's jack-knife; he lost a blade and had a new blade put in, then the handle was broken and he got a new handle; but still it was 'the same old knife,' The work has been ably revised lately by E. R. Root, son of A. I. Root, also a skillful and experienced beekeeper, and the whole is entirely up-todate and practical. For one who has a single colony of bees, and who desires a work to which he can confidently turn for

an answer to the thousand and one questions constantly coming up in practical bee-work, it would be hard to invest \$1.20 more profitably than to send for Root's A B C of Bee Culture."

See what F. Danzenbaker, inventor of the Danzenbaker hive says:—

"Mr. E. R. Root:—I have read former editions of the ABC of Bee Culture, and I have carefully read all of the lastest. It is so greatly improved, and brought down to date, brimful of the latest experiences of the most successful methods in all departments, that it might well be rechristened 'Bee-keeping from A to Z.' The hundreds of expensive and beautiful illustrations display to the eye what the text conveys to the mind, in a way to cover the entire field of apiculture, for beginners and veterans alike.

It is worth many times its cost to a beginner with but a single colony, and to those who have handled hundreds of colonies half a lifetime as well. It would have been worth thousands of dollars to me if I could have had such a book forty years ago, and I would not take \$50 for the copy I have now if I could not get another.

If it could be placed in every school and library in our land, for the instruction of the masses, it would greatly increase the consumption as well as the production of honey, adding greatly to the health and wealth of the people."

Sold by dealers in bee-keepers' supplies, or sent post-paid on receipt of \$1.20.

See our advertisement on back cover.

The A. I. Root Medina, Ohio.

MOMOMOMOMOMOMOMOMOMOMOMOM

A Veteran.

This smoker has been used in the apiary of the editor of the Review for the past ten years, and, so far as practical use is concerned, is exactly as good as new. This is a characteristic of the Bingham smoker—they last. The Smoke Engine, Doctor and Conqueror now have a brass, telescopic hinge, as shown in the small cut below.

Gontinued Improvements.

Bingham smokers are the original; have been the standard of excellence for twenty years; and it is no

wonder that the four-inch Smoke-Èngine goes without puffing, and gives no trouble from inky drops. The perforated, steel fire-grate has **381** holes to air the fuel, and support combustion. Heavy tin Smoke-Èngine, 4-inch stove, sent by mail, \$1.50; 3¹2-inch, \$1.10; 3-inch, \$1.00; 2¹2-inch, 90 ets.; 2-inch, 65 ets.



OKOKOKOKOKOKOKOKOKOKOKOKOKOKOKOKOKO

For 25 cts. extra, any size of smoker will be made to order of sheet *brass*, which will neither rust nor burn out, and ought to last a life time.

T. F. BINGHAM,

Farwell, Michigan.

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QUEENS

Are my specialty. I have 500 colonies and can, if necessary, run 1,000 nuclei. I shall have two experienced apiarists in my employ. I can begin sending out queens of this year's rearing as early as March; and throughout the whole season I shall send them

By Return Mail.

My bees are Italians, from im-orted stock, also from Doolittle, as well as from selected home bred stock.

Prices are as follows: Untested. \$1,00; 3ix for \$5.00; twelve for \$0.00. Tested. \$1,50; six for \$8,50; ,twelve for \$15,00. Best breeder, \$1.00.

Root's Goods

At Root's prices, plus carload rate of freight. 2-00-tf

W.O. Victor,

Honey Extractor

for sale. I have a **new**, Van-Allen & Williams honey extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed **automatically**—without stopping the machine. The regular price of such a machine is \$20.00, but I took this one in payment for advertising, and, as I wish to get it into cash as soon as I can, I offer it for only \$15.00.

W. Z. HUTCHINSON,
Flint, Mich.

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and hives, sections, can furnish frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,
Augusta, Wisconsin.

ueens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

The Time has Arrived

for you to buy your shipping cases, those five-gallon cans, and a few hundred of the new Danz, cartons (send for sample) to harvest that crop of honey in proper shape. We can furnish you with these and all other supplies. Cash paid for beeswax. Send for catalog

M. H. HUNT & SON, Bell Branch, Mich.

Pleuse mention the Review.



Bee keepers should send for our

CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive.

J. H. M COOK, 62 Cortland St., N Y. City Please mention the Review.

Wanted Vour Honey.

tion and price.

ter where you are. Address, giving descrip-

THOS. C. STANLEY & SON, Fairfield, IIIs.

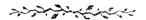
At Ripst

Now is the time for all Eastern and Southern Bee-Keepers to send in their orders for Bee-Hives and Bee-Keepers' Supplies. We have a special offer to make to all Eastern and Southern buyers. Let us know your wants and we will take pleasure in showing you that we can really save you money over our. Eastern Competitors. The reasons are two-fold. In the first place, we are located in the lumber region of Wisconsin, and get our supply of lumber direct from the mills; whereas, our Eastern competitors are buying lumber in our state and paving freight on rough lumber, which weighs much more than the finished product to their Eastern factories, and then freighting the finished product back all over the West. In the second place, we support no branch houses or middle men. We sell direct no branch houses or middle men. no banch moses of made med. We set three to the consumer, and the only way a dealer can make a profit off our goods is by buying the larger quantity which is open to any purchaser, and selling at the small quantity rate. The cost of an article is based on the cost of material (here we shine), the cost of labor, and a reasonable profit to the manufacturer. We sell our goods on this basis, while the manufacturer who sup-

ports branch houses all over the United States, and some in foreign lands, must add to what we would consider a fair selling price, the freight charges from his factory to his supply-house; he must have interest on his investment, while his goods are waiting for a purchaser; he has rent to pay every month his branch house is kept open; he has additional insurance on the goods in branch houses; he must pay cartage from the cars to his branch house, and again back to the cars. Then the manager and clerks in the branch house must be paid. All these things tend to increase the cost of the commodity to the consumer. If prices are the same at the branch house as at the home factory, then the price at the home factory must be raised to meet these constantly increasing expenses; and the bee-keeper who takes his supply from the home factory is helping to support the branch houses in different States.

We sell f. o. b cars at Hudson, with an allowance on freight for goods going east of Chicago. Buy you bee Hives and supplies from us and you will get the goods at first cost.

Superior Stock.



Every bee-keeper who has had experience with several strains of bees knows that some are far superior to others-that there is scrub stock among bees, just as there are scrub horses, cattle, sheep and poultry Let me give my own experience. Years ago, while living at Rogersville, I made a specialty of rearing queens for sale. Before engaging in this work I bought Italian queens and Italianized, not only my own bees, but all within three miles of my apiary. In buying those queens I think that I patronized nearly every breeder in the United States; and even in those years of inexperience I was not long in noting the great difference in the different strains of bees. The queens from one particular breeder produced bees that delighted me greatly. They were just plain, dark, threebanded Italians, but as workers I have never seen them equaled. They seemed possessed of a steady, quiet determination that enabled them to lay up surplus ahead of the others. Easier bees to handle I have never seen. It sometimes seemed as though they were too busy attending to their own business to bother with anything else. Their honey was capped with a snowy whiteness rivaling that of the blacks. In addition, to these desirable traits must be added that of wintering well If any bees came through the winter it was the colonies of this strain. They came as near being ideal bees as any I have possessed. All this was twenty years ago; and several times since then I have bought queens of this same breeder, and I have always found this strain of bees possessed of those same good qualities-industry, gentleness, and hardiness. In addition to this they cap their honey as the blacks do theirs. I have frequently corresponded with this breeder, and with those who have bought queens of him, and I am thoroughly convinced that he has a strain of bees that are far superior to the general run of stock. It I were starting an apiary, for the production of honey, I should unhesitatingly stock it with this strain of bees.

This breeder has always a livertised in a modest, quiet sort of way, nothing in proportion to what his stock would have warranted, and I have decided that I can help him, and benefit my readers, at a proof to myself, by advertising these bees in a manner befittingly energetic.

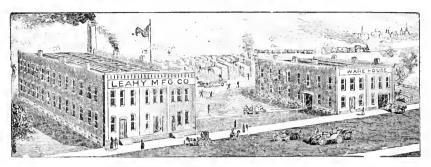
The price of these queens will be \$1.50 each. This may seem like a high price, but the man who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem so high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen SHOULD prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to every purchaser, and if these instructions are followed, and the queen is lost. another will be sent free of charge. This is not all; if, at any time within two years, a purchaser, for any reason whatever, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble. It will be seen that the purchaser runs no risk whatever. queen does not arrive in good condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurly mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise it 4 did not know that the stock is really superior.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price, and that is in concertion with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review tor 1000, can have a queen for \$1.00. That is, you can have the Review for 1000 (and 42 back numbers) and a queen for \$2.00. Of course, all arrearages must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arrearages and to pay in advance to the end of next year.

of course it is now too late to send out queens, but they can be ordered, either alone, or in connection with a subscription to the Review, and the orders will be booked and the queens sent next spring.

W. Z. Hutskie in, Flint Mich

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superbindeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progres-

sive Bee-Keeper. Address

LEAHY Mfg. 60., Higginsville, Mo.. East St. Louis, Mo. Omaha, Nebrasha.

Prices Tell.

Being located where we can buy basswood bolts at a very low price, and owning a factory furnished with machinery well adapted to the manufacture of sections we are able to furnish strictly—first-class, snow-white

SECTIONS.

in 5,000 lots, at \$2.15 per thousand; less than 5,000, \$2.25 per thousand. No. 2, in 5,000 lots, at \$1.50 per thousand; less than 5,000, \$1.65 per thousand. We also furnish hives, supers, shipping-cases, and all kinds of upplies. Send for catalogue.

H. RIENOW& SON,

Prairie du Chien, Wis.

Page & Lyon,

Mfg. Co.

New London, Wis.

Nearness to pine and basswood forests, the possession of a saw-mill and factory fully equiped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

Latest Improvments Perfect Goods Reasonable Prices.

Hives, shipping cases, sections, extractors, etc., everything a bee-keeper needs. Catalogue and copy of the American Bee Keeper Pres.

The American Bee Keeper is a live monthly and has been published by us for the past ten years -50 ets, per year.

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls. where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the becs. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular; price list,

and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

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YARDS, RACES.

Italian, 3 - Banded Italian, and Holy Lands.

We have secured our stock from the best breeders of the U.S., and now we are able to offer the best strains of the best races in America. Queen the best races in America. Queen Rearing is our specialty; we have been at it for years, and this depart-ment is under the immediate supervis-ion of our Mr. H. H. Hyde. We want ion of our Mr. H. H. Hyde. We want the address of every bee-keeper for our queen circular which gives prices and methods of queen rearing, honey production, prevention of swarming tc. Prices, either race:— Untested June, July, Aug. and Sept.

75 cts ; 6 for \$4.25.

All other months, \$1.00; 6 for \$5.00. Tested, June, July, Aug. and Sept., \$1.25; 6 for \$6.75. All other months, \$1.50; 6 for \$8.00.

Discounts for quantities. tested and breeding queens a specialty.

O. P. HYDE & SON,

1-00-tf

Hutto, Texas.

Listen! Take my advice and buy your bee supplies of August Weiss; he has



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tons and tons of the very finest

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered ere. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies. Send for catalogue and be your own judge. AUG. WEISS. Hortonville, Wisconsin.

19



This is the original one-piece section-man who furnishes onepiece sections as follows:

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK,

Watertown, Wisconsin.

WINTER

Losses are not always the result They may of the same cause. come from starvation; from poor food; from improper preparations: from imperfect protection: from a cold, wet, or possibly, a poorly ventilated cellar, etc, Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult "ADVANCED BEE CULTURE." Five of its thirtytwo chapters treat as many diferent phases of the wintering problem.

Price of the book, 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken, either U.S. or Canadian.

W. Z. HUTCHINSON,

Flint, Mich.

Violin for Sale.

I am advertising for the well-known manuam advertising for the well-known manufacturers of musical instruments, Juo. F. Stratton & Son, of New York, and taking my pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradiuarius," Red, French finish, high polish, and real ebony trimmings, price \$14.90. The bow is of the finest suakewood, ebony frog, lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and pearl dot in the end, price \$2.50 The case and pear too in the end, price \$2.50 The task is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes and bandles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is exactly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some inhas a more powerful, rich tone than some in-struments here that cost several times as much. I wish to sell his on fit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

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W. Z. Hutchinson, Flint, Mich.

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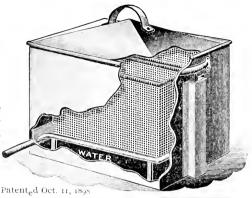
We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive. J. H. M. COOK. 62 Cortland St., N. Y. City



Beeswax Extractor.

The only Bees Wax Extractor in the world that will extract all the wax from old combs rapidly by steam. Send for descriptive illustrated catalogue.

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I have several hundred

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of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

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so carry a complete line of other supplies. Catalog free. R. H. SCHMIDT & CO., Sheboygan, Wis. 9-99-tf.

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Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

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1900 Queens 1900

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J. P. H. BROWN, Augusta, Ga.

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RUY A RUZZ-SAW.

write to the editor of the Review. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

THE

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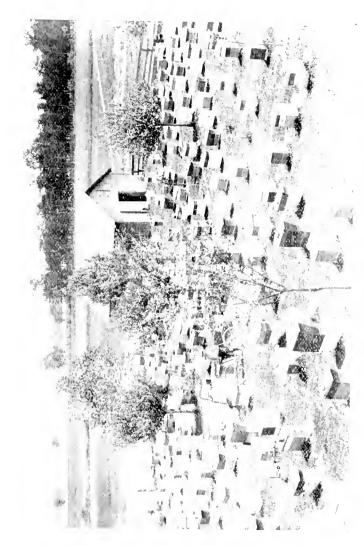
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APIARY AND BEE-CELLAR OF JOHN F. OTTO, FOREST JUNCTION, WISCONSIN,

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL XII, FLINT. MICHIGAN, APRIL 10, 1900. NO. 4.

HE PRODUCTION OF COMB HONEY WITH THE HED-DON HIVE. BY J. F. OTTO.

To have strong colonies at the opening of the honey-flow, and to keep them strong during such flow, is one of the most important things connected with comb honey production. A weak colony may give us some extracted honey, but we must not expect any fancy comb honey from a weak colony. I have made beekeeping my exclusive business for four-teen years, and in all that time I have never been fortunate enough to get any fancy comb honey from a weak colony.

I keep from 250 to 300 colonies, mostly all pure Italians, in one yard, and have no out-apiaries. In order to tell how I manage my bees, to make a long story short, and to tell it right, I shall have to begin with the fall of the previous year.

It is important that bees are in good condition in the fall of the year. To accomplish successful wintering two things are absolutely necessary. First, A good, dry, clean cellar. Second. Colonies that are populous and have an abundance of good honey. In order to accomplish this, I unite all weak colonies, and those having poor queens, with medium colonies. This I do in August, or in Septem-

ber, according to the condition of the colonies. If any feeding is necessary it is done at the same time. I do not believe in late feeding; unless it is in giving combs that were filled with honey and well sealed during the honey-flow, and then kept in a nice, dry place. The *condition* of the colonies in the fall is of the greatest importance. If this is what it ought to be, the temperature is not so important, as long as it does not go below 35°, nor above 60°.

I always leave my bees outside until it freezes up for good. They have been left ontside as late as Dec. 17th; but, as a general rule, they are put in the cellar the latter part of November or fore part of December. I put them in the cellar in four rows; one on each side and two in the center. This leaves a walk on each side between the rows.

I go into the bee cellar once in two weeks until about March first, after which I watch the bees more closely. It sometimes gets as hot as 80° in my beecellar. Then I open the doors during the night. The next morning the bees are all quiet and good natured.

All of my colonies in Heddon hives are wintered in two brood-cases. I have tried some in one case, but found it too small a hive to winter bees in.

Just as soon as the snow is nearly all gone, and the mercury goes up to about 60°, I begin to carry my bees out of the eellar; doing the work at evening, as a general thing. At first I carry out about two-thirds of the colonies. This is the number of colonies that I intend to begin with at the commencement of the honey-flow. The other one-third is intended to be united, later, with the others already taken out. As soon as I can, and the weather will permit, I make a temporary examination of the colonies which I have taken from the cellar, and thus find out which are the weak and medium Having located the weak colonies. and medium colonies, I then bring out the remaining colonies, and place them by the side of the weak and medium colonies, for the purpose of uniting them later in the season. The uniting is done in the latter part of April, or in May; unless it may be the very weak colonies, which are united with medium colonies as soon as possible.

By practicing this method, my colonies are all in good condition, and ready to go into the sections, at the beginning of the honey flow; besides it does away with all poor-laying queens, and reduces the colonies in number, thus making room for prime swarms, which are the best comb honey producers.

It is a very easy matter to unite two or more colonies in the Heddon hive. I have some 8-frame Langstroth hives in use, but will dispose of them first chance I have; I am using them because I have them on hand and they are too good to throw aside. Of all the different kinds of hives that I have used, I find none so handy as the Heddon. If at any time I intend to unite two colonies I go to the colonies, and remove the lower brood-case of each. If there are some bees in the lower cases. they are shaken off the combs in front of the upper cases which are set down on the bottom-boards. This is done at any time during the day when it is warm enough so that the bees will not chill. Towards evening, when the bees have

stopped flying, I simply take the two brood-cases of the two colonies which I wish to unite, and put one on top of the other, put on the cover, and the work is done. If I have no preference for one of the queens, I let the bees take their choice; and in many cases they have chosen both; and the two queens have lived together in one hive over a year.

I keep all my colonies that I have in Heddon hives in two brood-cases; but often have a queen-excluding honey-board between the two, during the honey flow, to keep the queen in the lower one.

I use the 4¹4 x 4¹4 x 7-to-the-foot sections, and the Heddon super, without separators. I fill the sections nearly full of foundation. This is done sometime before the honey-flow begins. I always fix up one super for each colony at this time; then, as soon as the honey flow has begun, I put on the supers, one super on each colony. All hives are then set level, except that they slope an inch towards the entrance, so as to keep the rain out of the hive.

Now commences the real work of the season. If the honey-flow is good, the bees keep me and my two sons busy from four o'clock in the morning until eight in the evening, putting foundation in sections hiving swarms and looking after the bees to keep them busy in the sections.

As soon as a colony has its super about three-fourths full, I put another super on top; then, while the bees are filling the rest of the lower sections, and starting to seal the combs, they will also go in the upper super and draw out the foundation. In this way I get straighter combs. As soon as the combs in the lower super are about half capped I raise it, putting the upper one below. This is the way I manage all my colonies until they swarm. If another super is needed, I go through the same performance, and so on, through the honey-flow.

Now the time has come when they begin to swarm. The queens are all clipped. When a swarm issues I go to the hive, pick up the queen, put her in a wire cage, and hang her on the branch of a tree, at a convenient place, where the swarm is flying around. In a few minutes the bees discover her, and settle on the branch where she hangs. By this plan I induce all of my swarms to settle on a branch of a tree where I can get at them very easily. When the swarm has settled, I then get the hive, which consists of two, Heddon brood-cases, with frames, containing narrow strips of foundation, in the upper case only. the hive down near by where the swarm is clustered. I shake the bees into a large pan and then down in front of the hive. Just as soon as they have all marched into the hive, I carry it to the stand which it is to occupy. This is the way that I handle every prime swarm; and I have handled as many as 35 in one day-and all of them settled on the very same branch of the tree.

The next swarm that issues, is handled in the same way; and then carried and set by the side of the other swarm that issued first. The two swarms are left that way until each swarm has built its upper case full of combs. As soon as that is done, I remove the lower empty broadcase of each swarm, and unite the two swarms by putting the two brood-cases, with queens and bees, one upon the other, on one bottom-board, thereby making one colony of the two. I put on the cover and leave them that way until the next day, when I lift off the upper brood-case, put a queen-excluding honey-board on the lower case, shake all the bees from the upper case down in front of the hive, and put the upper case back on the hive, leaving the queen excluder between the two cases. Then I go to the old colonies from which the swarms issued, take off the supers and put them on this young newly united colony.

The old colonies are supplied with Heddon brood-cases filled with empty combs, and are kept busy filling old combs with honey which is to be extracted, or to be used in the fall for supplying such colonies as are in need of honey.

By this method I get very strong colonies that are excellent comb honey producers.

If two or more swarms issue at the same time, I cage all the queens, and as soon as enough bees have settled with the queen, I shake them off, and proceed as before stated.

If after-swarms issue, I hive some ten or fifteen of them in single Heddon brood-cases, filled with combs. As soon as one case is filled with honey, another case is added. My reason for hiving a few after-swarms is this: If, at any time during the honey-flow, I am in need of a good queen, I have her on hand, and, as a rule, introduce her by uniting the colonies. All other after-swarms are put back, and the queen-cells destroyed.

I leave all the comb honey with the bees until the white honey season closes. Then I take off all the finished comb honey; and that which is nearly finished is put on colonies having young laying queens, but allowed only one brood case, and then fed until the combs are all sealed over. I put four or five supers on one colony when feeding back.

All honey is taken off by the use of the Porter bee-escape, which I think is a blessing to bee keepers.

FOREST JUNCTION, Wis., Mar. 20, 1900.



SALE OF EXTRACTED HON-EV. BY H. D. BURRELL.

The Prize Article.)

While extracted honey may be produced in any movable-frame hive, it is best to use a hive adapted to the work. In this hustling age, one who would not "get left" in the race, even in honey raising, must cut all the corners he can. In long practice, I have found a "divisible-brood-chamber" hive best for extracting. With such a hive, rousing colonies may be had by easily increasing the size of the brood-chamber, and simply manipu-

lating its parts. I have united many colonies, at about all seasons when bees can be handled, by merely smoking them a little and placing one hive upon another, with nothing between, and have yet to have harm done by quarreling. If one queen is superior, kill the other; if not, let the bees manage that matter. want increase, it is readily had by division; and I have easily worked through whole swarming seasons without a swarm, by a plan by which it is not necessary to go to the apiary oftener than once a week. Such hives are also good for wintering Honey in them bees, indoors or out. can be handled easily by the case, which saves time, trouble and bee stings, and there is no danger of the frames sliding together, and causing leakage.

It is best to have plenty of extracting combs, and not let the bees run short of room. Queen-excluding honey-boards simplify the necessary work. When honey is about three-fourths capped over, it is usually ripe enough to extract; but it is better to tier up and leave it on the hives until the end of the season. In localities where there are two crops in a year, a light-colored one and a dark, with a dearth between, it is better to keep the two crops separate, by removing the light honey just as the dark flow is commencing. In the hot weather usually prevailing at this season, honey will soon ripen in the hive, and may be extracted if not capped at all. At the end of the dark honey-flow it is usually cold or cool weather, and unfinished honey will not ripen nor be capped over. This unripe honey should be kept separately, and sold for manufacturing purposes, or to some other cheap trade. Sell none but well-ripened honey for table use, if you would build up and hold a profitable retail trade. That is a trade that pays. is not necessary for honey to be mild and white to be good. I have many customers who prefer good buckwheat or goldenrod honey to white clover.

In taking honey from the hives, it pays well to have some bee-escape boards.

They save smoking, shaking and brushing bees. Porter is the best of the many escapes I have tried. Insert them at any time when convenient, and if there is no brood or queen above them, the upper stories will usually be practicably free of bees in 24 hours or less. Extracting from the brood-chamber is seldom necessary or advisable, with good management.

It is essential to have a bee-tight extracting room; and a stove in it greatly simplifies the work. Almost any small room may be cheaply made bee-tight, and easily warmed, by lining it with heavy building-paper, lapping the paper well, and tacking lath over the joints. In such a room honey can be easily extracted at any convenient time, summer or winter. If the weather is cool or cold, pile the honey on empty caps or temporary benches, above head-height if possible, heat the room to a temperature of 90° or higher, and keep it so for 24 to 48 hours, according to the length of time the honey has been exposed to a low temperature. It will then extract easily. Some kinds of honey will soon candy in the comb, and must be extracted soon after being stored; but most honey keeps best in the combs, and it is better to leave it there until wanted for sale or use.

An active 12-year-old-boy, with any 2-frame extractor, will throw out honey as fast as almost any man can uncap it. Expensive, reversible extractors are nice to have, but seldom necessary. It is best to have two uncapping knives, and keep one all the time in hot water, changing often. A small oil stove is handy for this.

For storing extracted honey, or shipping it in a candied state, or for holding cappings and draining them, I know of nothing handier or much cheaper than lard caus. They hold about seven gallons; and I get them of my grocery man at 10 cents each after the lard is sold; and can get them new of the butcher or hardware man at 25 to 30 cents. For uncapping, arrange a can in a convenient place, put a wooden frame on top to rest the

honey and clean the knife on, and let the cappings drop inside. Have a strainer made of tinned wire-cloth, 12 meshes to the inch, soldered to a circular tin rim with sloping sides, and a little larger than the top of a can. Place this, convex side up, on a can of cappings, and invert all on another can. After the cappings are well drained, put them through a solar wax-extractor, even if it is necessary to wait for warm weather in the spring.

In warm weather, the bits of comb, and other foreign matter that will always get into honey white extracting, will soon rise to the top, and may be skimmed off. In cool weather, however, they must be strained out, and the honey must be heated in order to do it quickly. A good and simple plan is to put it in 5-gallon, screw-cap, tin cans and heat it slowly to a temperature of 120° to 115°. A piece of iron or a stone one inch thick placed under one side of the can will prevent danger of burning the honey. Attach a cheese-cloth sack, about 5 x 12 inches in size, to a sliding honey gate, screw the gate on the can, tip it on one side, and draw the honey through the sack into any convenient receptacle. hole made in the top of the can with an awl, or some other sharp pointed tool, will give vent and the honey will run more freely. The hole can be stopped when necessary with solder or wax. It saves watching, and some danger of having a muss to clean up, by having the extractor on a bench high enough so a can on platform scales can be set under the honey-gate. A tin funnel, unusually large at both ends, is often a very handy implement. Get a daisy thermometer for 25 cents, to test temperature with, and be very careful not to let the honey get too hot. That will injure the color and flayor, and melt the wax in it, which will adhere to the inside of the can, or spoil the strainer.

Don't use galvanized iron for any purpose where honey will come in contact with it. The acid in honey effects the plating. I once had an extractor can made of it, and if a small quantity of honey was left in the can a short time it acquired a peculiar, offensive taste and smell.

From the finer flavored honeys it is better to exclude the air, but the stronger flavored kinds are improved by exposure to the air in a well ventilated room; care being taken, of course, to exclude dust and insects. If you are troubled by ants, make a bench to keep honey on by lay-2 x 6 pieces of lumber edgewise on the floor and covering them with boards. Make a chalk-mark one inch wide entirely around the middle, lengthwise, of the 2 x 6 pieces, and not an ant can crawl up over it. They can't get a foot-hold.

For shipping liquid honey, perhaps the square tin cans are best, but for cheap honeys, barrels or half-barrels are cheaper.

Produce a good, well-ripened article of extracted honey, "get a hustle on," and sell it directly to customers yourself for a fair price. Do this and observe the Golden Rule, and you will find pleasure and profit in the business.

SOUTH HAVEN, Mich., Feb. 28, 1900.



PRING PROTECTION THAT
IS NOVEL, CHEAP AND EFFECTIVE. BY M. P. CADY.

A noted pugilist being asked for the secret of his success, replied, "When I saw a head, I hit it." The ability to go straight to the important element of one's business, and then to strike the proper blow, is certainly one of the secrets of success. The bee-keeper is confronted with many perplexing problems—location, wintering, spring management, marketing the crop, or perhaps as

ment, marketing the crop, or perhaps as frequently, the problem of subsistence without substance; of the many proclems the most pertinent, perhaps, at this season of the year, is spring management.

No matter how plentiful the sources of nectar supply, unless the apiarist has his

colonies strong at the beginning of the honey flow, he will meet with only disappointment and failure, hence the whole system of spring management should be directed to the production of strong colonies early in the season. To secure the strongest colonies, two things are necessary; namely, plenty of heat, and plenty of food. The food supply has been very ably discussed many times, as has also the question of securing sufficient heat to enable the bees to do their best in rear ing the largest possible amount of brood early in the season. Various kinds of of packing have been suggested, all of which have their merits.

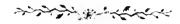
Without entering into a discussion of the merits and demerits of chaff, sawdust planer shavings, etc., any of which are often unavailable, and all of which require some time and skill for successful use. I wish to say that enough materials for proper spring protection of fifty colonies can be carried on an ordinary wheelbarrow. All that is necessary is a roll of good water-proof building-paper inot tarred), two or three bunches of lath, two pounds of common shingle nails, a knife, a saw, and a hammer. As this plan of spring protection is probably new to many of your readers, detailed directions as to how it should be done may not be out of place.

The paper should be cut into strips wide enough to reach from the lower edge of the bottom board to the cleat supporting the cover, or if the plain flat board cover is used, to the upper edge of the hive body. It should be of sufficient length to reach clear around the hive and make a generous lap at the front end. The laths should be cut into pieces of the length and width of the hive: eight pieces will be required for each hive. nails will be needed to nail each piece to the hive. All the material can be prepared in the work-shop, so that it will be but little work to prepare each hive. When all is ready, wrap one of the paper strips about the hive, even with the lower edge of the bottom board, tack the lath to lower and upper edges of the hive, bring the ends of the paper into proper position at one end of the hive, fasten them with the strips, and the work is done. For the entrance cut a hole in the paper of the proper size. It is a good plan to cut the lower lath for the front end of the hive into two pieces, and use them for entrance If the paper is lapped under them, it makes the entrance very warm and snug. For top protection, cut another paper large enough to cover the top of the brood chamber and allow sufficient to lap it about an inch on each side. this under the cover, and you have your colony packed in a manner that is simply draft proof, and if the bees are given a liberal food supply, the process of brood rearing will go on very rapidly. The details of packing are adapted to an eightframe single-wall hive with a telescoping cap, but any bee-keeper can adapt the details to fit his own hive. The object of protection is to conserve the heat generated by the colony, and this method accomplished it with a medium expenditure of labor and capital. There are three advantages in this method of protection; namely, low cost, cleanliness, and the portability of the hive is not affected. After the weather begins to get warm the top packing can be despensed with, and the side packing is no hindrance to the adjustment of the surplus receptacles. When through with the packing, it can be very quickly removed from the hives, piled up and burned, when it is out of the way forever, or if it is thought desirable to preserve it for future use, it can be stored away in a very small space. my own experience, I have found it cheaper to burn up the whole lot, and get a new supply each year.

The best paper that I have used for this purpose has been an oiled paper which cost about a cent and a half a pound, the bees disturbed the covering pieces but very little, and where colonies were weak, I used it for division boards with very satisfactory results; one special advantage of paper for the last named use is that it

is unnecessary to remove any of the brood frames to make way for the division board, which enables me to keep my full complement of frames in each hive, ready for use whenever 1 wish them.

BIRNAMWOOD, Wis., Mar. 29, 1900.



HALL WE ADOPT THE TALL SECTION? BY C. A. HATCH.

This question was asked at the Wisconsin convention, and hotly contested pro and con, and no doubt



every comb honey producer who has not already come to a conclusion is asking the same question; and upon his answer may depend the amount of his income for the coming season. L. H. Martin's

article in February Review, on this subject, is the cause of this article being written. I have the greatest respect for Bro. Martin, and his opinions on beematters, especially on comb honey production, are not to be slighted. If it were not for his closing paragraph one could put him on the affirmative of the question; but when he closes by saying: "Had I a full compliment of Heddon supers for comb honey in square sections. I would not change for the sake of using the tall section."

This paragraph, taken in connection with the remainder of his article, either puts him on the fence, or, to say the least, makes him a rather weak advocate of the change.

He admits that it is a fact that tall sections will sell better in some markets; so there is no chance for disagreement there. This, however, is one of the

smallest advantages in favor of tall sections; for, as he well says, when all get to using them there will be no comparison, and, hence, all will tare alike.

Neither should a thing be accepted because it is *new*, nor clung to just because it is *old;* this would bar all progress, and deprive us of all our advantages as thinking beings.

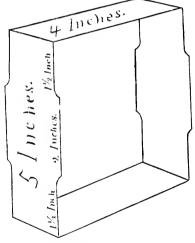
The advantages of tall sections are three. 1st. Appearance on account of shape. 2nd. Better finish; more of the comb attached to the wood, thereby raising the grade. 3rd. Increasing the product.

Perhaps, before anything further is said, it would be well to say that what is meant, in this article, as tall a section, is the Danzenbaker, bee-way sections, 4 x 5 inches in size; and that any other change that is less in size is not enough to be worth considering.

The first point in their favor has been sufficiently considered by Mr. Martin, and nothing more need be said, except this, that if the honey in tall sections can be sold, even for two years, at an advance of one cent a pound, no producer can afford to lose it.

Second. Better finish. After personal experience, in a small way, and observation where they were used on a large scale, in the apiary of Mr. II. Mendelson, Ventura, California, who used them by the thousand. I am convinced that these tall sections will be better finished than square ones. Why, I am unable to answer; but I think R. C. Aikin has given at least a part of the solution in the fact that bees naturally tend to build comb deeper than wide. Any one who ever used the old-style 112-lb, and 2-lb sections knows that it seemed as if it were just as easy to get a case of them filled as it was to get one of less weight in pound sections; and, may be, we are getting back closer to nature by using the 4 x 5 inch section. In my opinion, the ideal section is yet to be made. We have been forcing the bees to divide them selves up into a great number of small clusters by our

close sections, and closed separators, when instinct leads them to form only one large bunch for mutual heat and waxelaboration. We have not only divided them off into little apartments, $4^{T_4} \times 4^{T_4}$, but have fixed the corners so that it is almost impossible for the bees to get into them in large numbers. My ideal section would be so made that the projecat the corners. tions would be, not but in the middle of the sides; and these projections should be only long enough to keep the sections in place; something as shown in the accompany-We are working in the ing sketch.



STYLE OF SECTION IN WHICH THE BEES
HAVE FREE ACCESS TO THE CORNERS, THUS SECURING MORE
PERFECT FILLING OF
THE SAME.

right direction when we use slat or fence separators, but we keep up the trouble by putting the upright cleats from top to bottom, then cutting off each section from its neighbor the same as before.

The third part of our defence, quantity, is not a point that admits of much argument. It is like some other things we may know without knowing the reason; but is it really necessary for us to always know the reason for a thing to make use of the fact? Farmers for many years

knew that land plaster was beneficial to clover, and vet scientists are not now sure why it is so. Shall a farmer wait for the scientist to tell him why, before he uses it? The value of manure on farm crops has been demonstrated years and vears ago, and vet science can not tell just why it is so? Shall the farmer burn his manure pile until tardy science catches up with him? The knowing why is a matter of knowledge which may or may not be of commercial advantage to the producer, let us rather demonstate the fact and retain that. But can not we find some of the why in the facts above stated in regard to 11, and 2 lb. sections; or in the fact that the comb surface is increased while the weight remains the same, hence, evaporation goes on faster, and therefore the honey ripens quicker?

In answering the most common argument against tall sections, viz., cost of extra supers, we will ignore the first point in their favor, i.e., better appearance, and take only the last two, finish and quantity. I think, from extended observation at the apiary of Mr. Mendelson, who had 4 x 5 sections by the ton, that the grade was raised on at least 10 per cent. But to be moderate, we will cut that in two, and call it 5 per cent.; and the 10 per cent, of increase of yield we will also halve, so, on a 50-lb, vield, we would have 212 cents gain for grade, and 25 cents for yield; which would give us a gain of 2712 cents. Can a man afford to lose 2712 cents to save the cost of a 15 cent super?

RICHLAND CENTER, Wis. Mar. 8, 1900.



PRING MANAGEMENT AND
COMB HONEY PRODUCTION. BY G. W. M'GUIRE.

The warm spring sun has again waked our bees from their long slumber and repose, and the wide awake bee-keeper should now lay aside every weight, and gird on the whole armor, as these are golden moments, and a little

neglect just at this time may greatly lessen the success of our season's work.

I formerly inspected the whole apiary in early spring to ascertain the condition of each colony. I don't do that now. When soft maples are in bloom I walk through the apiary in the warm part of the day, closely observing each hive the outside appearance of which tells to the experienced observer the condition within. The bees should be dropping in front with hugh loads of pollen; and young bees should be sporting in front of this and that hive. It would be considerable of a drawback to open these active colonies at this time; as they are in the best possible condition for broad rearing, with every little crevice completely sealed. But now you find a colony gathering only slight loads of pollen. Yes, it is weak and discouraged. Let's lift it. O, how light! We will open it. Not as weak as we thought, but almost starving. wait until almost sundown, to avoid robbers; and give it two combs of honey. Should we not have the honey we feed with a divison-board feeder, and cover up warm. In about ten days, more feed should be given, and so on, till the harvest arrives.

We now come to a hive where the bees are carrying in but little pollen, and appear restless. See them running round the entrance, and up the front of the hive, and flying off a few feet, and then returning. Yes, they are queenless, but we will only contract the entrance and let them alone, and hive the first swarm in with them; as it has never paid us to tinker with queenless bees.

So time passes on, and our colonies are rapidly filling up with young and hatching bees. The wide awake bee-keeper who buys his bread and butter with honey will get all of his sections, supers, etc., ready during this calm just preceding the storm. I formerly waited till the flow was in progress, and the combs beginning to whiten with new wax before putting on boxes. I don't wait now; as it has a tendency to bring about swarming; and,

as a comb honey producer, I have found it profitable to discourage swarming in every possible way, and still leave the bees in a normal condition. About ten days before the expected flow I place a superfull of boxes with starters and two or three bait sections on each hive. Before the flow comes the bees will become accustomed to their new addition, and will enter it with a rush when honey comes in freely.

When our first super is about full, and all the center sections sealed, we change the full ones to the outside, and the partly filled ones to the center, lift this super, and place an empty one under.

Should a swarm issue, we hive it on the old stand, moving the parent colony to a new location. We formerly put on boxes, or changed the super from the old colony, to the swarm at once but we don't do that any more, as, by so doing, we have had many a fine box spoiled with brood. [Use a queen excluder. Ed. Review.] We now wait 24 hours. By this time the queen has her brood-nest started, and will not leave it. When our next swarm comes out, if we desire no increase, we shake most of the bees from the old colony (that first swarmed) in front of its swarm; hive the new swarm in it, (the old colony+and place it on the stand of the colony that swarmed last. The queen will make short work of the queen cells, and this colony will be in a condition to gather a big surplus. However, if we desire some increase, coupled with a fair surplus, we hive all swarms as advised in No. 1, but look out for the after-swarms that will surely come in from 9 to 17 days. We do nothing to prevent the first one coming, just let it come when it wants to, and, while it is settled, go to the old hive and cut out all the cells, which are now easily found by the scarcity of bees. doing this we secure many fine young queens by Miller's "pulling" method. These Het run down into the sections of colonies having old queens that need superseding; or into hives that have just swarmed, to prevent after-swarms. When

the cells are cut out, we hive the swarm back where it came from. The queen soon mates, the nurse-bees begin to move the honey which has accumulated in the brood-nest during the absence of a queen, to give room for the young step-mother to raise her family, and the result will be sections filling up with wonderful rapidity. After a while the swarming subsides, and the honey in the field begins to wane. We don't give any more room now, but remove the full boxes to the outside, and the unfinished to the middle. Should the flow linger a few days we will probably get most of them filled. A short stop in the flow leaves many unfinished boxes. These I place in wide frames holding eight sections each, with wire cloth tack ed on one side, and extract as we would ordinary combs. The combs are stacked up on one or two colonies to be cleaned up; after which they are packed away to be used as baits next season.

DARK RIDGE, N. C., March 5, 1900.



TIMULATURE FEEDING OF BEES IN THE SPRING. BY IRA BARBER.

As I have never seen a plan given in the bee papers for stimulating brood rearing in the spring which



I think is as effectual as the one I use, I will describe my method. When the bees are set out in the spring, each colony that is short of honey has a two-quart fruit jar of feed given it at once, the first evening;

then, as soon as I can look over the others, all those that are short for bees are fed in the same way.

The object in feeding the weak ones first is to get them started in brood rearing as soon as possible; so that they will be up with the best of the others the first of June.

It is the strong colonies that call for lots of sections, while the weak ones call for only a few; and one can hardly expect a large crop of honey, even in a good season, when only 30 or 40 per cent. of his colonies are strong enough to enter the sections at the beginning of the honey season.

In my locality I am surrounded with large yards of bees, two miles away, my bees being in the center, and I am compelled to feed; as the natural supply is too limited in the spring.

The feed I use is made of best coffee A sugar; and is fed as thin as the bees will The object in feeding thin syrup is to give the bees all the work possible in bringing it down to a proper thickness to be of any use to them. This causes them to raise the heat in the hive so that all the eggs that the queen lays are quite sure to be cared for. the feed were given them as thick as honey there would be nothing for them to do except to take it down and store it in their combs: and there would be a cold hive, and very little effort at brood rear-The warmer the weather the thinner the feed can be fed.

The top-board for my hive has a hole large enough to take the open end of a two-quart fruit jar. When I am not using the feeders this hole is covered with an old separator, tacked on with carpet tacks, and can be taken off and put on without much trouble, and is never in the way. I make the hole with an extension bit just large enough to take the mouth of the jar, then fill the jar with feed, and, for a cover, use a piece of cheese cloth large enough so it can be held on by a small string or a rubber band.

When the jar is put in place it should be turned over quickly so that the air will not get in and allow the feed to run out. When the feeders are in position the feed will not go out any faster than the bees draw it.

The hole in the board should be nearly in the center of the board, so as to come directly over the center of the cluster where the bees can take the feed to the best advantage. The cap to the hive should always be used to keep out the rain, and, also, to keep robbers from getting a taste. If your caps are not high enough, make a narrow rim to raise it to the proper height to cover the jar, and make all secure.

The advantages gained by feeding in this way are many. First, the feed is where the bees can best get at it, and there is no loss of time on account of the There is no occasion for the weather. bees to go out for water, as the feed furnishes that. There is no leaving the hive or cluster to get the feed at any time, and no loss of heat, as the jar closes the top of the hive as close as it would be closed Then, again, if the jar were not there. our early pollen producing trees, such as alder, popple, and elm, produce large quantities of pollen, but no honey to gather it with, so the bees are obliged to carry honey from the hives to stick the little pellets of pollen together, and this feed answers the purpose of honey, which is always used in gathering pollen, no matter from what source if comes from; even artificial feed, such as corn meal, oats, rye, or any other provender that we may give them, to take the place of pollon, is always made into a sweet-cake before it is carried home by the bees.

I begin to feed all colonies about the first of May, and continue to feed until clover blossoms, except about ten days or so, when dandelions are at their best.

Each colony requires about three jars of feed in two weeks, where there is pienty of honey in the hives, and but little coming in, and it takes a little over a ton of sugar for every 150 c donies. The cost is quite an item, but 4 have have always found that I have been well-paid for the expense and labor required; for, if the season turned out a f alure, my bees were

in better shape to stand it, and my losses in stock were nothing when compared with those that occurred when not helped in the spring.

When fed in this way, quite a number of colonies will swarm before the honey season sets in. All such are hived and given a jar of feed the first evening; so that a large brood-nest will be started before the sections are given.

Those who think that all this sugar is going into the sections when they are put on, will be surprised upon opening a hive to find the sugar syrup gone, and in its place but little else except bees and brood.

When dandelions yield honey well, all the surplus room in the hive will be well filled with that kind of honey; which is all right for the next winter.

When feeding has to be done in the fall, I use the same jars, but enough jars on at one time so that all can be done as quickly as possible after all brood rearing is over; then we know what they have got. The feed for winter use should not be as thick as honey when given. Let the bees cook it to the right thickness, and it will never candy in the combs. No acids are required in the feed for winter.

DE KALB JUNC., N. Y., Dec. 18, 1899.



CONDUCTED BY R. L. TAYLOR.

The best critics are they Who, with what they gainsay, offer another and better way.

CLOSED END FRAMES BEST FOR A "GLU-EY" LOCALITY.

In Gleanings, 5, Dr. Miller quotes Rambler's advice to one contemplating much moving of bees to adopt some sort of closed-end frame, and replies: "Fixed

distance frames, but not closed-end, for this gluey locality." The editor gently rebukes the doctor, and then says: "I have come to the conclusion that, where propolis is very bad, a closed-end frame is better than the Hoffman; and a metal-spaced one better than either." I cannot see how any frame can be better than a closed-end one for a "gluey locality," but they must be close-fitting—long enough so that no propolis can be crowded in between the ends and the end of the hive, and kept closed up, so that none can be put between their edges. That is the kind used in the Heddon hive.

WHY ARE BEES NOISY IN THE CELLAR?

Editor Root, having said that when bees quiet down in a cellar after a fire has been started there, no one can say how much of the trouble was due to cold, and how much to foul air. Dr. Miller replies: "But I'll tell vou one case in which you can tell. Temperature in cellar, 50°; same outdoors. Bees noisy. Fire started toward evening running temperature up to 60°. Next morning bees still, with thermometer 50° inside and out. air had all to do with it in that case." The editor replies: "That is a clear case." But is it a clear case? Bees often become noisy and then quiet down without either a fire or a change of air. I remember once, in particular, going into my beecellar and finding the bees in a tremendous roar, exceeding anything I had heard before or since, but the next morning they were quiet enough. I could assign no certain reason for the commotion. only know, for certain, that no ventilation was needed, and that neither extra ventilation nor fire was given. are not supposed to be with our bees in the cellar any considerable proportion of the time, we cannot say how often such periods of commotion occur; nor how long they last; but many cases might be collected to show that it is altogether improbable that they are caused by lack of ventilation. One strong case, from the experience of a man of no less reliability than T. F. Bingham, of smoker fame,

who says, in substance, (American Bee Journal, 76) that he has found that bees live for weeks quiet and contented in an atmosphere so destitute of oxygen that in it a lamp would go out in a second. I can conceive that in a close cellar containing no feature to create any motion in the air, except the bees themselves, that when the bees remain quiet the air in the hives might become surcharged with vapor as compared with the air outside the hive, and that the bees in consequence institute periodical fannings to drive it out.

A NEW THEORY REGARDING FERTILE WORKERS.

"Oregon," in the American Bee Journal, 39, asks Dr. Miller: "What is a laving worker? Is it a worker fed a few days as a queen?" evidently meaning, by the last clause, fed for a small proportion of the proper time for feeding a larva for the production of a queen. Judging from the facts he cites, he has a theory that laying workers come from larvæ fed for queens, not from the age of three days and onward, but for only a comparatively short time before being inclosed. He says "I have several times had colonies that became queenless when there was no brood in the hive, and such colonies never developed laying workers." I have noticed the same thing in colonies that became queenless during the winter. He afterwards made experiments, putting a frame of brood just ready to seal in one hive. after which it produced laving workers; and also taking from a strong colony its queen and all its brood, and so leaving it for 30 days without the appearance of laving workers, but laving workers appeared in due time after some brood nearly ready to cap had been given it.

The theory interests me, and if it proves to be well-founded, it will be of considerable value.

I can only relieve this item from the curse of not finding fault, by saying that Dr. Miller entirely misses the point of the query, and only indulges in a general disquisition on the subject of laying workers.

The doctor might have made his experiment, undertaken to show that bees do not choose for the production of queens larve that are too old, if he had only followed it up, and determined whether some of his queens did not turn out to be laving workers, of considerable value.

THE WONDERS OF OUR SPELLING.

Mrs. R. C. Aikin in discussing reformed spelling (Gleanings, 87) asks the brethren if they have ever eaten any ghoughphtheightteeaux and says she should like the pleasure of cooking some for them if they will make "us a visit." The editor says it looks as though it might be something tremendous and confesses that he cannot pronounce it. If he had remembered that in our wonderful language gh sometimes has the sound of p, ough o and phth the might have ventured to send a grateful acceptance.

MEASURING UP THE DEAD BEES.

The editor of Gleanings, at page 179, takes exception to the manner in which I developed his statement concerning the amount of superannuated bees which might be lost in wintering 75 or 100 colonies in the cellar. In replying he developes considerable ingenuity in his attempt to minimize the effect of his plain statement. First, he complains because I seemed to take it that he meant the whole cellar bottom might be covered to a uniform depth of from 1 to 2 inches, or what amounts to the same thing, because I supposed he meant to that depth on an average; but it appears now that he did not mean that. He intimates that the bees would not be evenly distributed clear out to the cellar walls, and, besides, he would figure out the space occupied by 25 uncomfortably large (about 18 x 20 or 15 x 24 in.) stands which he supposes would be free from bees.

Then, as he dislikes to take the average depths, so he dislikes to take the average loss to the colony; or I should say the loss to the colony, for by rejecting averages the loss must be uniform. The greater loss, he thinks it natural to sup-

pose, is the result of the greater number, which enables him to reduce the highest loss from 5 to 4½ qts.; but if he consistently persists in rejecting averages, no colony can have a greater loss than 4½ qts., and, of course, none less than that. Such a loss uniformly distributed one would think would be sufficiently disheartening. If he takes the other horn of the dilemma, and agrees that there is a variation, and that while some lose much less than 4½ qts, others must lose much more, then we still easily have a loss from 2½ to 5 qts.

Again, if the greater loss comes from the greater number, then the less number is responsible for the less loss, and we find 27s ats, the loss to the colony, with 75 colonies, and bees enough to cover the floor 1 inch, and we have a loss, by the editor's method of 275 to 414 qts. instead of 21 to 5 gts, as I stated it. The less term is increased while the greater is diminished, so a pursuance of the editor's artificial method does not vield results materially different from mine, and hardly furnishes a stable foundation for the editor's remark that "It shows how wide of the mark one can be when he becomes a professional fault-finder."

Pursuing the matter, he deducts the space occupied by the 25 stands and reduces the capacity of the cellar floor to little more than one-third what it was, and reduces the loss correspondingly. stands are very much smaller, and so better covered by the hives, yet often the dead bees in them is greater than it is outside—how are the bees kept out of these hugestands? Again, where the amount of dead bees on the floor is so great there will be found among the combs and on the bottom boards of the hives more than enough dead bees to supply the spaces occupied by the stands with the average quantity--why should not some account be taken of these?

But I find, on reviewing the whole subject, that I have been allowing the editor to draw me entirely away from his original proposition, which was not that there would be a particular depth on the floor, but that "75 or 100 colonies in a cellar 10 x 10 may furnish dead bees before spring sufficient to cover the floor an inch or two in depth." This is an abstract proposition; not a concrete one. It allows no room for shallow places nor for stands and affords no foundation for the refinement of reason to which he resorts.

Finally, it is touching to witness the loyalty of e-litor York to his brother editor as he comes so promptly to his support (American Bee Journal, 185) and says editor Root figured the loss "less than one-third as many" as I did. Then he waxes hilarious, and says "Mr. Taylor seems to have had his colonies in some way suspended from above leaving the entire floor to be covered with bees."

Behold, how good and how pleasant it is For brethren to dwell together in unity!

I trust, however, it may not be at too great a sacrifice.

LAPEER, Mich., Mar. 21, 1900.



A NEW COVER will be put upon the Review beginning with the next issue. It will be a bright, beautiful goldenrod in color.

"Greasy Sections," or the cause of them, may be traced to the queen, according to views of some bee-keepers. Mrs. A. J. Barber holds the queen responsible for almost everything that goes wrong—greasy sections and all.

TRAVEL-STAIN, according to the views of Mr. S. P. Culley, is caused by the saliva of the bees, which first turns the combs yellow, and then black, as tobacco does a pipe. If such were true, I fail to see why more saliva should be placed upon some parts of the comb than upon others.

APRIL is the month to leave the bees alone, says Mr. A. E. Hoshal of Canada.

STARVED BROOD.

I would not lull any one into fancied security when there was foul brood in the apiary, but it is well to know that so good an authority as Wm. McEvoy of Canada says there is great danger of starved brood in the spring when a frost, or anything, cuts off the incoming supply of honey. The bees will not uncap the the sealed stores fast enough to supply the larvæ with food. The remedy is for the bee-keeper to uncap some of the sealed honey; to see that there is uncapped honey in the hive until fresh honey is again brought in.

A NEW EDITION of the A B C of Bee Culture will be gotten out the coming season. It is being thoroughly revised again, and a great deal of pains taken with the whole book. It will probably be September, or later, before the new edition will be ready, but orders may be entered at any time, and the book will be sent as soon as ready. The 1899 edition is nearly exhausted, and any one expecting to send in an order will do well to wait for the 1900 edition.

DEPARTMENT OF CRITICISM TO BE DIS-CONTINUED.

It is with considerable reluctance that I have decided to discontinue the Department of Criticism. I am led to take this course for the same reason that I dropped the other departments, viz.; the gradual accumulation of excellent original articles for which I have no room. I believe that more good will be done by the publication of these articles than in criticising what appears in the other journals. As I have said before, the dropping of these departments is no reflection upon the men who conducted them; it simply means that I think the space can be better used in a different way.

COMPENSATION FOR FOUL BROODY COLO-

NIESTHAT ARE DESTROYED.

In the last issue of the Review I mentioned that the bee-keepers of Wisconsin were trying to have an amendment made to their foul brood law, allowing owners of foul broody colonics some compensation for their colonies when destroyed. menting upon this, Stenog., in Gleanings, says that this could not be done, probably, as such colonies have no value anyhow. If we are to be compensated because our bees contract this disease, he thinks that we ought to be given a pension when we get the grip. A foul broody colony does have some value; unless too far gone with the disease it may store a fair crop of honey. A cow diseased with tuberculosis would be of value to her owner if he kept on selling her milk and butter, but it is because of the menace to the public that the law says she must be killed. It is done for the public good, and it is no more than fair that the public should bear a part of the burden. If the State reimburses a man for the loss of his cow that is killed because she has the tuberculosis, there is no reason why it should not do the same by the bee-keeper who destroys his foul broody colonies for the sake of the public good.

"TO MUCH MICHIGAN IN IT."

Mr. F. L. Thompson says that he considers the Review as good a journal as can be made by a stay-at-home editor. Just going to Wisconsin and Canada he considers the same as staving at home. There is too much cellar-wintering, and fruit-bloom, and small hives, and fall corn-weather, and the like. To sum it up in a few words, "To much Michigan in it." The Western beginner gets false ideas, and the western specialist has constantly to apply a sifting process. There may be something in this criticism. have no doubt that a different management is sometimes needed in Colorado, or in California, than is needed is Michigan. It is true that I have had no experience in Western bee-keeping, but articles from bee-keepers living in the West have always been welcomed in the Review. We have several times had Western bee journals that were started, ostensibly, because the eastern journals had "too much Michigan in them," but I was never able to discover that they differed greatly, in this respect, from the Eastern journals.

Supposing that Mr. Thompson is correct, there is this to be said in defense: Nine-tenths of the readers of the Review live in Canada and the Northern part of the United States east of the Mississippi, and in the first row of states west of the Mississippi.

It is true that on my trips among beekeepers, I have not yet visited any very distant parts of the country. I may do so in the future. I hope that I can. It seemed more sensible to me to begin near home. To many of us are inclined to look for great things away off somewhere, while something just as good may be overlooked right under our noses.

A TRUST, OR CO-OPERATION, NEEDED IN BEE-KEEPING.

Gleanings contains articles from several men advocating, or setting forth a need, of a trust, or combination among bee-keepers. A discussion on trusts was once started in the Review, and I cut it off because it seemed to be wandering too far from bee-keeping. If all of the industries of the country could be organized into trusts, each kind by itself, the beekeepers forming a trust, the wool growers another, the glass makers another, and so on, then we would all be on an equal footing. As it is now, with part of the industries taking the advantages of organization, and other industries with no organization, there often comes injustice. The trouble in forming a combination of bee-keepers, or of farmers, is because of their large number and scattered condition. Notwithstanding these conditions, some bee-keepers, notably those of California and Colorado, have bettered their

condition by combination and co-operation. Some years these two States seem to be favored spots that produce large quantities of honey, and, if the rest of the country produces a short crop, there is then an opportunity for the bee keepers of these two states, by combination, to secure good prices for their honey. out organization nothing of the kind could be accomplished. I believe that this question is one that might be profitably discussed. If there were some way by which we bee-keepers could know what the crop is as soon as it is off, and could then decide what prices ought to be, and would all stand by those prices, it would be accomplished. Sounds simple enough, but how can it be done?

WHICH IS THE MOST HOPEFUL FIELD?

This is an age of specialty. tration of aim, energy, capital and purpose accomplishes more than does a scattering of them in various directions. this respect, bee-keeping is no exception. We have had many discussions as to what would best mix with bee-keeping, and the decision has always been, some more Many a bee-keeper fails from keeping two few bees. Bees in limited numbers will probably always be kept by a large number of persons, and this is entirely right and proper, the same as a bee-keeping specialist may keep a few fowls, or plant a garden, if he really cares for that kind of work, but, as the years go by, more and more will the great bulk of honey be produced by men who follow beekeeping as a business. This being the case, the question arises: In which direction is commercial bee-keeping susceptible of the greatest improvement? Where is light most needed? Which is the most hopeful field?

I think that the time was once when bee-keepers in the Northern States would have unhesitatingly said: *The wintering of bees.* Perhaps some of them will say so now—and they may tell the truth, too. However, we are doing so much better

in this direction than we did years ago, as to leave it an open question whether wintering should be placed at the head—or further down in the list.

The idea of planting specially for honey has practically been abandoned. It has been found much easier for Mohamet to go to the mountain than to bring the mountain to Mohamet.

Our hives, supers, extractors, comb foundation, smokers, and other implements, together with the methods for their manipulation, are probably not perfection, but, if the bees will only bring in the nectar, these things enable us to handle it to pretty good advantage.

The devising of some plan whereby bees may always find nectar in paying quantities, will probably never be accomplished, but we have had many reports of some strain of bees lying up a fair surplus while some other strain had to be fed. Here is food for thought. Improvement of our stock may not be the most hopeful field at present, but it certainly will yield abundant fruit if rightly tilled.

Our methods of putting up honey for market, and our systems of marketing, are great improvements upon those of the past, but they are decidedly behind the times, as compared with the ways that some products are put upon the market. We need system, uniformity, co-operation and business like methods. Too many of us, when we have produced a crop of honey, think our work is done. It is only half-done.

I have now mentioned a few of the fields in which I believe that we as beekeepers may labor with fair prospects of receiving our just rewards. Which one ought to arouse our brightest hopes, I am unable to decide; and to the one who will, before May 15th, send me the best article on this subject, giving reasons why some particular field offers the greatest inducements, I will pay \$5.00 cash. To the writer of each article, aside from the prize article, that is accepted I will send the Review one year and one of the Superior Stock Queens.

UNDESIRABLE FEATURES OF MICHIGAN'S
FOUL-BROOD LAW.

Gleanings for April 1st has a communication from Harmon Smith, of Orleans, Michigan, in which he says that he had much to do in defeating the foul brood law that bee-keepers attempted to have passed by our last legislature. His reasons for doing this are that he thinks that we have all the law that is now needed—all that is needed is its enforcement. Mr. Smith thinks that the reason for wishing a change in our present law is to give some one at the capital a nice fat job. Allow me to call Mr. Smith's attention to several features of the old law that I consider objectionable.

There is too much complication about the appointment of a commissioner, a bee-keeper suspects that foul brood exists in the apiary of a neighbor, he must first find four other bee-keepers to join with him in petitioning the appointment of a foul brood commissioner for that county. Upon the presentation of such petition, the judge of probate is to appoint a competent commissioner, a resident of the county, who shall receive \$2.00 a day for his services while making the investigation. If it turns out that there is no foul brood where it was suspected, then the person making the complaint must par the commissioner. You will see that there is a whole lot of red tape about it. Many bee-keepers who are not in the business very extensively would hesitate about taking all of this trouble, even if they did suspect the presence of foul brood in some neighbor's apiary, especially if they would be called upon to bear the expense if it turned out that there was no foul brood. Compare all of this with simply the writing of a letter to a state inspector, saving: "I suspect that there is foul brood in the apiary of my neighbor, John Brown " There is another point right here: A man does not like to complain openly of his neighbor; it sometimes leads to hard feelings. With our present law no complaint can be made without the complainant being known. There is no objection to his being known, but because it will be known who made the complaint, and because the expense will be thrown upon the complaninant if there is no disease, many who are bee-keepers in a small way will keep still because of the difficulty, publicity, and possibility of expense. This may seem like a strange objection to urge against our present law, but any one with a good knowledge of human nature will see at a glance that it is a most serious objection. A state commissioner can be notified easily and privately, and he comes, not apparently because a neighbor has complained, but because he has a risht to come—he has the official authority to examine any man's bees.

Another objection to our present law is that it is not possible to find a competent man in each county to cope with foul brood. Foul brood may have made its appearance for the first time in some county, and there may be no bee-keeper who knows very much about it. To successfully cope with the disease requires a man who is thoroughly competent and has had experience.

And now comes the weightiest objection of all: The present law makes no provision whatever for curing the disease—for saving the bees and hives. They must be destroyed. At the time when the law was passed it was probably all right in this respect, as we did not then know that the bees and hives might be saved. Now we know that the bees may be shaken off and saved, and the hives may be disinfected and used; and, if one has sufficient skill, and is careful enough, even the honey and wax may be saved.

In Canada and Wisconsin they are getting rid of the scourge. In Michigan absolutely nothing is being done, simply because the present law is lacking in the points that I have mentioned.

Mr. Smith says that the anxiety to get a new law is that thereby some one at the capitol may get a job. Bee keepers who

have worked to secure the passage of this bill certainly did not have in view the giving of "some one at the capitol a job" Besides, Mr. Smith should know that the passage of the proposed bill carried with it the plan of having the commissioner appointed upon the recommendation of the State Bee-Keepers' Association. That body would not be very likely to recommend the appointment of "some fellow at the capitol."

We need a new law. There is no question of that; and that opposition to it should come from our own ranks is a surprising thing.

EXTRACTED.

BLACK BROOD.

The Conclusions of Dr. Howard Regarding the Disease. Its symptoms, and Remedies that are Advised.

Of all the dangers that are now threatening bee-keeping, none appear greater than what has been named "Black Brood." So far as is known it started in New York some three or four ago. From its great resemblence to foul brood, it has been confounded with that disease; but, at last, Dr. Howard of Texas, has made a thorough investigation and has published the results in Gleanings. I will not take the space to print a full account of this investigation, but all bee-keepers should know the conclusions at which he arrived. They should know the symptoms, so as to be able to detect the disease if it should break out in their apiary; and, while there has not vet been discovered a positive remedy, it is well to know what is now considered the best course to take. will quote from Dr. Howard's report the portion that covers these points. describing his investigations, Dr. Howard says:--

Here conclude my investigations. which have been carefully conducted; al-

though under disadvantages as to season, etc., they have in a great measure been satisfactory. Many points of vital interest have been made clear, while others of equal importance are necessarily obscure. It is clearly not foul brood. It is clearly something new. It is apparently a disease of the pupa stage. The infection is clearly not in the pollen-not due to a fungus but due to bacteria.

All diseases in animal and vegetal life, are due to the results of parasitic invasion -some by their mechanical presence, some by the ferments produced in the body, and in plants by changes in or taking from them their life juices, causing

starvation and immature growth. In any given case of rotten brood, dead from freezing, starvation or other causes, being allowed to remain in the cells much of the poison generated, as well as the germs themselves, or their spores, remain adherent to the sides of the cell. These are like the seeds which "fell on the stony ground," and will not grow until the proper soil, such as is furnished by the rich nitrogenous substances supplied to the brood by the nurse-bees is brought in contact with them, when a luxuriant growth obtains. This produces a fermenting, decomposing food unfit for the brood, and sets up a ferment, a decomposition within the bodies of the bees, thus destroying their lives. This might happen to the host with any form of parasitic life, either animal or vegetal.

It might be said, speculatively, that the disease had its origin in starvation, and that in some cases several putrefactive bacteria of similar biological character were responsible for this malady, which, when once started and undisturbed, becomes as destructive as the oldfashioned foul brood. The two germs isolated having similar, or the same, biological characteristics, especially an alkaline medium in common, are both in a measure responsible for this disease, and perhaps the variations, the malignancy, etc., are due to modifications by combined action. It is, evidently, now due to a specific germ, Bacillus milli: the other, perhaps purely accidental at first, on account of its requiring more oxvgen, is now found in the thorax among the respiratory organs.

While it has not been clearly demonstrated by facts, practically, it appears to be true that perfect bees, especially nurse-bees, are injured by the infection. Foul brood, pickled brood, and black

brood. Foul brood, due to Bacillus alvei

a specific bacterium.

Pickled brood, due to Aspergillus pollinis—a specific fungus.

Black brood, due to Bacillus milli, modified, perhaps, by Bacillus Ihoracis,

specific bacteria.

Black brood may be introduced into a healthy colony through infected food or infected combs-combs from which the diseased brood has been removed, or in which particles remain. The food for the young larvæ, either from its chemical reaction or from its lack of nitrogenous substances, is not a suitable medium for immediate growth of the germs; but when the chyle-like food is furnished the older larvae, a chemical change in the food produces a change in the liquids of the bee, which become a suitable nutrient medium for their rapid development and dissemination. It would appear that in some cases, Bacillus thoracis was the cause of death, as the spiracles, or openings admitting air to the respiratory apparatus, were closed by the products of decomposition or the result of it. In such cases it is usually nearly matured bees that are choked for want of air. These did not show the discoloration or shapeless mass which always obtains when Bacillus milli is found in the abdomen. This latter germ, multiplying rapidly in the rich nutrient medium of the alimentary tract, may destroy younger brood than the former. It is often found in other parts, and is certainly the cause of dark masses of rotten brood. Both germs are found in the same comb, and often in the same bee, thus insuring a mixed infection.

Brood is usually attacked late in the larval life, and dies during pupation, or later when nearly mature and ready to come forth through the chrysalis capping. Even after leaving the cell they are so feeble that they fall from the combs helpless. Most of the brood dies after it is sealed. In this it is much like pickled brood, except that as much or more brood dies in the late larval stage than in the pupa. In foul brood, while brood of all ages dies, vet more dies "at the ages of 6, 7, 8 and 9 days than at at any other age" (author's Foul brood, page 16 even before the rich chyle-like food mixed with pollen is given, which is such a necessary environment for pickled brood and black brood.

When the larvie show the first signs of this disease, there appears a brownish spot on the body, about the size of a pinhead. The larvie may yet receive nourishment for a day or two; but as the fermentation increases the brownish spot enlarges, the larva dies, stands out, swollen and sharp at the ends. In this they are like pickled brood, except that the brown spot is not present in pickled brood, but pickled brood sometimes becomes brown after death. Foul brood turns brown only after the action of putrefactive germs have brought about decomposition. No decomposition from putrefactive germs takes place in pickled brood. In black brood the dark and rotten masses, in time, break down and settle to the lower side of the cells, in a watery, syrupy, granular liquid—not the sticky, ropy, balsam or glue like semi-fluid substance of foulbrood. It does not adhere to the cell walls like that of foul brood; has not the characteristic foul odor which attracts carriou-flies, but a sour, rotten-apple smell, and not even a house-fly will set her foot upon it. Cappings in foul brood are sunken in the center when broken, sometimes puffed out by internal gases. In black brood, the cap is disturbed from without, sometimes uncapped, and cell contents removed by the bees; not so in foul brood. The cap in pickled brood is usually undisturbed. The decayed brood masses do not adhere to the cell walls like either of the others.

During a good honey flow, of a few week's duration, if the colonies are strong, black brood and pickled brood entirely disapear so far as appearances go; and even in foul brood, colonies seem for the time to improve. The most common causes for this apparent improvement are that in black brood and foul brood the old foul combs are filled with honey instead of brood; and eggs are laid in cells hitherto not used for brood, and in new combs when comb building is going on; or where comb-foundation is used, the queen takes advantage of this and deposits her eggs before the cells are drawn out and filled with honey. Again, proportionately, there is less brood-rearing and more comb building during a heavy honey-flow in strong colonies than in weak ones. weaker colonies these diseases do not disappear, as more brood is reared and less comb is built, in proportion to the mature bees, than in strong ones In pickled brood the infection is in bad pollen; nice new pollen always causes it to disappear. Why these diseases should recur when there is a dearth of honey in the field, would be of interest to many.

In strong colonies, as we have seen, proportionately less brood was reared during the honey flow, and now we have fewer bees to keep up the strength of the colonies against the normal death-rate.

Again, the brood is gradually finding its way back to the center of the brood-nest, where there are many infected cells which were filled with honey during the rush of the honey-flow. These, with inclement weather and other unnatural surroundings, are conducive to recurrence. Often new pollen is stored on old infected pollen—in the same cell—and when this new pollen is exhausted, and no other to be had, the old pollen must be used; hence a recurrence of pickled brood.

The best time to effect a cure is during

a honey-flow.

Adopting a modified McEvoy plan:

Make your stocks strong by uniting; place them upon comb foundation starters and cage the queen. After five days remove the starters and make them into wax, and give full sheets of foundation—keeping the queen caged five days longer. This will give time for all infected mature bees to have disappeared before any brood is reared.

Don't try to save infected mature bees by drugs. They are not worth the trouble; yet salicylated syrups, * during a dearth of honey in the field, would in a measure prevent a recurrence, but would not cure the disease. It would not destroy the germs, but prevent their growth, by placing them in an antiseptic † medium.

If a cure is contemplated when little honey is coming in, the above modified McEvoy plan should be observed in every detail, and the bees fed with salicylated syrups until the combs are well filled, so that all food may be rendered antiseptic by the time brood-rearing begins.

Great care should be taken to melt all old combs and removed starters into wax at once. Do not use a solar extractor, but remove the material at once to hot water or a steam extractor. Until further investigations shall reveal the longevity of these germs in open air, I shall recommend a thorough disinfection of the hives, frames, etc., by boiling in linseed oil for half an hour. This would not injure hives or fixtures; besides, the high temperature reached would insure thorough disinfection. Careful, practical, and experimental work, coupled with microscopic investigation in the presence of this disease when at it worst, will, I feel confident, discover some practical plan for its successful eradication.

BEE-MOTHS AND ROBBING.

How to Avoid Trouble from Both, and Stimulate Brood-Rearing in the Spring.

We have been taught to believe that the way to avoid trouble from moths and robber bees was to keep the combs of honey shut up closely. To a certain extent, and under certain conditions, this is probably true, but there are other conditions and circumstances when an opposite course may be pursued with an additional profit. This plan was described about a year ago by Harry S. Howe, and published in the American Bee Journal. Mr. Howe said:—

During the past few weeks I have attended several bee-conventions in different parts of the State.

Among the things that struck me as worthy of note was the number of people who had questions on the two subjects—bee-moths and robbing. Generally the man who was interested in one also had some questions on the other.

And not less curious to me were the remedies proposed. One man advised that the combs to be kept from the ravages of the moth be first soaked in brine, then dried and packed away. When they were to be used again they were to be soaked in fresh water to remove the salt, and then dried again!

Some years ago I bought out a bee outfit. The former owner wintered the bees in a double-walled house. Some time during the previous winter he died, and the family, being afraid of bees, opened the door but left the bees just as they were. When I got them later in the season there was a sight. The rats had eaten the lower tier of hives about all to pieces. Some of the bees had moved out and taken up their abode in the corners of the room. Others had succummed entirely, while 15 colonies still held the fort in their hives, and the moths—well, ther was a great chance for missionary work. Yet in a season or two, without any special treatment, there were no moths to be seen. And the bees were not Italians either.

All the precautions necessary to keep my large stock of extracting-combs even at that place are to space them one less to the hive than they are used in the summer, and then leave them where they will freeze during the winter.

^{*} Sodium salicylate one onnce, water five gallons, white sugar forty pounds. Make syrup without heat.

[†] Antiseptics prevent germ growth. Disinfectants destroy the life of germs, by actual contact only.

The moth passes the winter usually in the egg-stage, and a good, solid freeze will kill those; so, in the spring there are no worms to eat the comb.

There are usually two broods during the season, one in the spring, the other during the fall. It takes about three

weeks for the larvae to mature.

Another point in the safe keeping of combs is the presence of pollen or dead brood. The larvæ of the moth cannot live on wax alone; they must have some other food. Now, combs used for extracting seldom have any pollen or other nitrogenous food for the worm. The combs which are in hives where the bees have died are the most liable to their attacks. How to protect them brings me to the second of those two questions.

We used to think that we must not let a bit of horey be exposed when the bees were not storing honey or we should have trouble from the robbers, but now we do about as we please in that regard; that is, always keeping in mind certain laws.

When the bees start to rob a place, if we can make them think they have got it all, there will be no further trouble, while if we cover up or take away the honey they will keep on looking for it.

Now for my method of feeding the bees, and at the same time caring for the combs that are likely to be troubled by the bee-

moth:

As soon as the bees begin to work in the spring, I go around and take out all the dead ones and store the honey and combs in the honey-house. Then I put out one or two hivefuls of it somewhere at one side of the apiary, leaving the entrances so the bees can get in and carry away the honey. As fast as one lot is carried away I put out more, as long as I have more to put out. Then I go through the hives and take out the heavy combs, replacing them with the ones first cleaned out, letting them carry this honey back in turn. This I keep up clear to the time of the honey-flow.

No self-respecting moth will stay in those hives that are used for feeding; things are too much stirred up, and the combs go into good, strong colonies often enough to discourage them if they tried it. If we can keep the spring brood of worms from maturing, we shall have to wait for more until our neighbor sends

them to us in August again.

As to robbing, the only time I ever see any is at the last extracting, after the honey-flow stops in the fill, and not then unless we are a little too slow in getting over the yard. I mean bees trying to rob one another, I usually give them

something else to think about at that time.

As fast as the combs are extracted they are spaced and piled crosswise of one another so the bees can get at them freely. Soon the bees find that there is honey to be had in the back part of the honey-house, and they start in to clean those combs. By the time the last one is piled away there is a scene like the one Ernest Root so graphically described after one of his visits to W. L. Coggshall, but there is no robbing in the yard.

Perhaps if one worked slow enough the bees might get started on colonies that were opened any time when there was a honey-flow, but life is too short and honey too cheap to spend that amount of

time over any one bee-hive.

I cannot better sum up the question than by quoting a remark made at dinner at a recent bee-convention: "No good bee-keeper is troubled by bee-moths or robbing."

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee–Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unscaled; both wood and comb unsoiled by travel stam or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent: except that a tew dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

CHICAGO, III We quote as follows. Fancy white 10 Other grades white, as to quality, 14 to 15; amber, 12 to 11; extracted, as to package, color and flavor, 7 to 6. Beeswax, 28.

S. T. 1 1811 & CO., 189 So. Water St., Chicago, Ills.

Mar. 14.

KANSAS CITY.—We quote as follows: Fancy white, 15: No. 1. white, 14: No. 1 amber, 13½; fancy dark, 13: extracted, white, 8; amber, 7; dark, 6; beeswax, 22 to 25.

C. C. CLEMONS CO., Mar. 14. 423 Walnut St., Kansas City, Mo.

CHICAGO, II.1.—We quote as follows. Fancy white, 15 to 16; No. 1 white, 13 to 14; hancy amber, 12; No. 1 amber, 10 to 11; hancy dark, 9; No. 1 dark, 8; white, extracted, 7^{1}_{2} to 8; amber, 7 to 7^{1}_{2} ; dark, 6^{1}_{2} to 7; beeswax, 28.

Mar. 14.

R. A. BURNETT & Co., 163 So. Water St., Chicago, Ill.

NEW YORK.—We quote as follows: Fancy white, 15; No. 1 white 13 to 14; fancy amber, 12; No. 1 amber, 11 to 12; fancy dark, 11; No. 1 dark, 10; white, extracted, 8 to 81_2 ; amber, 7 to 7^{1}_2 ; dark, 6 to 61_2 ; beeswax, 27 to 28.

Mar. 15.

HILDRETH & SEGELKEN, 120 West Broadway, New York.

BUFFALO, N. V.—The market is bare of fancy honey; and there is very lit le common. Good time to wind up now. Kish along what you desire to dispose of. We quote as follows: Fancy white, 16 to 17; No. 1 white, 14 to 15; fancy amber 12 to 13; No. 1 amber, 11 to 12; fancy dark, 9 to 11.

BATTERSON & CO. Mar. 14. 167 & 169 Scott St., Buffalo, N. Y.

NEW YORK, N. Y.—There is a steady demand for all grades of comb honey. The receipts are not heavy. We quote as follows: Fancy white, 15 to 16; No. 1 white, 13½ to 14½ amber, 11 to 12; buckwheat, 9 to 11. Extracted honey is steady at the following prices: California white, 8½ to 9; light amber, 8 to 8½; white clover, 8½; amber, 7½ to 9; they are asking, for extracted buckwheat, 6¾ to 7 cts, for kegs, and 7 to 7½ for tins, according to quality, but with very little trade. Florida extracted honey, 8 to 8½, light amber, 7½ to 8; amber, 7 to 7½. Other grades of Southern at from 55 to 80 cts, per gallon, according to quality. Beeswax, a little more active at from 27 to 28 per lb.

Jan. 11. FRANCIS II. LEGGETT & CO.
Jan. 11. W. Broadway, Franklin & Varick Sts

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.

Please mention the Review.

Wanted—To rent an Apiary, House and Fruit Garden.—C. S. DOWNER, South Haven, Mich.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

3-99-tf

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

Carniolans! Carniolans!!

The largest and finest stock in America. No other apiary in this country contains as many imported Carniolan Queens as this. The gentlest, the hardiest, gather the least propolis; no bee-yeil needed; equal Italians for honey.

RALPH BENTON, "The Carniolan Apiaries," 1801 Harewood Ave., Washington, D. C. 3-00.3t

Please mention the Review.

Hives Almost Given Away!

Below is a list of hives that I have taken in exchange for sections, foundation, etc., and I wish to self them. I will take \$30.00 for the lot. Supers, covers, bottom boards, entrance blocks, etc., are included, but there are no frames. I will, however, furnish new frames, all nailed up, for \$5.50 extra. The hives will hold nine Langtroth combs, and they are painted two coats of paint in different colors. Here is the list;—

o, new, Champion, chaff-hives, at \$1.35 . \$8.10 14, secondhand " " 1.00 . 14,00 11, " Simplicity hives " 72 . 7,02 Total, \$30.02

1 also have 1,000 of Root's No. $1,4^4x\sqrt{x}17$, sections that 1 offer at \$2.65 per 1,000, Who wants them? Speak quick.

CHAS. C. CHAMBERLIN, Romeo, Mich.

Please mention the Review



What Others say of Root's Plain Sections and Fences, and the Danzenbaker Hive.

CALIFORNIA.

F. Danzenbaker

F. Danzenbaker
"I must say I admire your comb-honey super.
When I saw your super and sections advertised
by The A. I. Root Co. I was certain it was good,
I shall try a mumber of thousand of your improved sections another season. I like your reversible bottom board. It works well. The
broad, deep entrance for hot weather is a splendid idea. I can more your bees with new combdid idea - I can move your bees with new combs, full of honey and brood, without breakage, with the best of success

M. H. Mendelson, Ventura, Cal. Dec. 6, 97

Mr. M is one of the largest honey producers in California. He brought thirty Danz hives complete and 525 supers which he used on 10 fr. I, hives He had 30,000 Danz, sections filled which sold in Los Angeles to the fancy grocers for 1115 c, when 414 aections sold for 8 to 9 c. A difference of 3 c each on 30,000 makes \$900.00, or quite enough to pay twice for the outfit which is good for years. He writes to Mr. E. R. Root in reference to a shipment of honey received from

him in Ang '97 as follows "Your tayor of the 24th at hand. The comb honey was not the best I had in the Danz, sections, as I could not get at it the time of shipment, Ten Danz hives produced me on an average of Ten Danz hives produced me on an average of six superseach, or 102 sections. One Danz hive produced seven supers, 1224 sections). Had this been a first-class year 1 could have done much better. This is 2400 sections from twelve Danz, hives at 11½ c 5276 m, at 150 section, or 530 per hive. In Jan 1200 Mr. Mendelson ordered 225 Danz, when the production and 255 Danz.

supers, 30,000 Danz, sections and 2500 cartons, This shows how one of California's large producers regards our hives

WINTER WELL IN NEW YORK

S. E. Wiley of Poughkeepsie, N. Y. writes on Aug. with, 1850 as follows. "The Danz, hive win-tered finely. Just as well as the double walled chaff hive. Your hive is practically a double walled hive with the closed end frames."

N. B. Franklin of Griffin Corner, N. Y. writes regarding wintering, "They wintered finely," 1 shall want more of your haves in the spring?" Later Mr. Franklin writes as follows

"I bought one of your hives in 'W, 22 in '67 and have sixty of them in use now and shall likely want too more next year, as I intend to buy more Your hive bottoms are hist class.

Vernon Burt of Mallet Crock. The man who always has honey" and has 150 or more two-story chaff-hives bought five Danz one and a half story hives in 159. In the fall he left the empty super on, placing a Bill's device over the brood-frames covered it with burlap and filled the super with dry chaff and tur of the trainch-deep telescopic cover on top of the separate thirds. The five hives all wintered a fely (The coldest winter weather ever known thereic contally as winter weather ever known there equally as well as the chaff-hives. For the Mr. Burt bought of more. In July he said he considered it the best hive The A. I. poot Co. had ever made. He would say it to any one at any time, and that it would in time go throughout the whole bee-keeping world. He was going to buy more of

NORTH CALIFORNIA.

S. D. Mathews of Hamilton, N. C. writes Dec.

15th, 1549 as below:

"I have used both the square and tall sections in all my apiaries five years, and know from practical experience that it will pay to discard the 414 sections and use only the 4 x 5 sections, and the Danz, hive with tence separators. They have made enough more this season in the same yard to pay for the hives.

I have made more honey this season per hive than any previous year in my fifteen years of bee keeping. FIFTEEN of my strongest Danz.

hives made a TON OF HONEY.

SOUTH CAROLINA.

J. B. Neil, Filbert, S. C. writes on Oct. 18th, 1890 as follows:
1 have handled bees twenty years in all kinds

of hives from the old box to the latest standard Langstroth, having fifty colonies in 8-frame Langstroth hives. When I saw a cut of the Danz hive I ordered fifteen of them and was so well pleased with them I ordered 40 more this spring, and transferred every colony from the Spring, and transferrer every colony, your seemy opinion of your hive. It is the best comb honey hive I have ever tried. I prefer a frame 5 inches deep for exever tried. I prefer a frame 5 inches deep 101 Catracting. They will work in your supers to good advantage; it is better than a deeper frame for the superstanding to work advantageousthe bees to maintain heat to work advantageously. Better use extra supers and tier up as needed. I prefer the closed end frames and have no trouble killing b es between them. I am satisfied your hives will take the lead in the near future; and the sooner bee keepers adopt it, the better it is going to be for them. I like your book Facts About Bees. It is practical.

VIRGINIA

Jos Griffin, Rio, Va. says on Aug. 14th, 1809; I have handled bees (to years) since 1869, in box hives, American, Tennessee hives, Mitchell, 8- and to-frame Langstroth and am now using the Danz, hive, and can say it is the best all purpose hive I know of, and shall use no other.

HONEY MERCHANTS.

"There was one case of the Elsie, Mich., lot that we opened this morning, that has 15 sections. The case was marked plain sections, about 12 lbs net. This was a very fine case of honey, and brought 15 cts. We thought we had more of it, and showed it to some of our trade; and the resalt was, we took orders from every man who saw it, for two or three cases — Do you know where we can get some of this? We should like to get a lot of this kind, and can use anywhere from 100 to 1000 cases

THE COLUMN S COMMISSION & STORAGE CO.

Columbus, Ohio,

The A. I. Root Co., Medina, Ohio.

MOMOMOMOMOMOMOMOMOMOMOMOM

Veteran.

This smoker has been used in the apiary of the editor of the Review for the past ten years, and, so far as practical use is concerned, is exactly as good as new. This is a characteristic of the Bingham smoker—they last. The Smoke Engine, Doctor and Conqueror now have a brass, telescopic hinge, as shown in the small cut below

Gontinued Improvements.

Bingham smokers are the original; have been the standard of excellence for twenty years; and it is no

wonder that the four-inch Smoke-Engine goes without puffing, and gives no trouble from inky drops. The perforated, steel fire-grate has 381 holes to air the fuel, and support combustion. Heavy Smoke-Engine, 4-inch stove, sent by mail, \$1.50; 312-inch, \$1.10; 3-inch, \$1.00; 212inch, 90 ets.; 2-inch, 65 ets.



For 25 cts. extra, any size of smoker will be made to order of sheet brass, which will neither rust nor burn out, and ought to last a life time.

T. F. BINGHAM,

Farwell, Michigan.

QUEENS

Are my specialty. I have 500 colonies and can, if necessary, rm 1,000 melei. I shall have two experienced apiarists in my employ. I can begin sending out queens of this year's rearing as early as March; and throughout the whole season I shall send them

By Return Mail.

My bees are Italians, from imported stock, also from Doolittle, as well as from selected home bred stock.

Prices are as follows: Untested. \$1,000 3ix for \$5.00; twelve for \$0.00. Tested. \$1,50 six for \$8,500; twelve for \$15,00. Best breeder, \$1.00.

Root's Goods

At Root's prices, plus carload rate of freight. 2-00-tf

W.O. Victor,

Honey Extractor

for sale. I have a *new*, Van-Allen & Williams honey extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed *automatically*—without stopping the machine. The regular price of such a machine is \$20.00, but I took this one in payment for advertising, and, as I wish to get it into cash as soon as I can, I offer it for only \$15.00.

W. Z. HUTCHINSON,
Fligt, Mich.

Wm Bamber,

Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections. frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money. time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for eash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Bresway wanted.

GUS DITTMER,
Augusta, Wisconsin

Queens.

W. II. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coning season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

M. H. Hunt & Son

Sell Root's Goods at wholesale and retail, at their prices. Our inducements are Strictly First-Class Goods, Cheap Freight Rates and Prompt Shipments. Our specialty Anything you want for your Bees. Send for our Catalog. Cash or trade for beeswax.

M. H. HUNT & SON, Bell Branch, Mich.

Please mention the Review



MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U.S., and have testimonials from satisfied customers in the U.S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 1st, 31 50 each. After June 1st, tested queens, either strain, \$1.00 each; untested, 75 cts. each. One-frame micleus with queen, \$1.50; two-frame, \$2.50; three-frame, \$3.25.

4-00-tf

I. W. MINER, Ronda, N. C.

Please mention the Review.

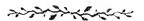
At First Cost.

Now is the time for all Eastern and Southern Bee-Keepers to send in their orders for Bee-Keepers to supplies. We have a special offer to make to all Eastern and Southern buyers. Let us know your wants and we will take pleasure in showing you that we can really save you money over our Eastern Competitors. The reasons are two-fold. In the first place, we are located in the lumber region of Wisconsin, and get our supply of lumber direct from the mills; whereas, our Eastern competitors are buying lumber in our State and paving freight on rough lumber, which weighs much more than the finished product, to their Eastern factories, and then freighting the finished product back all over the West. In the second place, we support no branch houses or middle men. We self direct to the consumer, and the only way a dealer can make a profit off our goods is by buying the larger quantity which is open to any purchaser, and selling at the small quantity rate. The cost of an article is based on the cost of material chere we shine), the cost of labor, and a reasonable profit to the manufacturer. We self our goods on this basis, while the manufacturer who sup-

ports branch houses all over the United Stace, and some in foreign lands, must add to what we would consider a tair selling price, the freight charges from his factory to his supply-house; he must have interest on his investment while his goods are waiting for a purchaser; he has rent to pay every month his branch house; is kept open; he has additional insurance on the goods in branch houses; he must pay cartage from the cars to his branch house, and again back to the cars. Then the manager and clerks in the branch house must be paid. All these things tend to increase the cost of the commodity to the consumer. If prices are the same at the branch house as at the home factory, then the price at the home factory must be raised to meet these constantly increasing expenses; and the beekceper who takes his supply from the home factory is helping to support the branch houses in different States.

We sell f. o. b cars at Hudson, with an allowance on freight for goods going east of Chicago. Buy your Bee Hives and supplies from us and you will get the goods at first cost.

Superior Stock.



Every bee-keeper who has had experience with several strains of bees knows that some are far superior to others-that there is scrub stock among bees, just as there are scrub horses, cattle, sheep and ponltry. Let me give my own experience. Years ago, while living at Rogersville, I made a specialty of rearing queens for sale. Before engaging in this work I bought Italian queens and Italianized, not only my own bees, but all within three miles of my apiary. In buying those queens I think that I patronized nearly every breeder in the United States; and even in those years of inexperience I was not long in noting the great difference in the different strains of bees. The queens from one particular breeder produced bees that delighted me greatly. They were just plain, dark, threebanded Italians, but as workers I have never seen them equaled. They seemed possessed of a steady, quiet determination that enabled them to lay up surplus ahead of the others. Easier bees to handle I have never seen. It sometimes seemed as though they were too busy attending to their own business to bother with anything else. Their honey was capped with a snowy whiteness rivaling that of the blacks In addition to these desirable traits must be added that of wintering well. If any bees came through the winter it was the colonies of this strain. They came as near being ideal bees as any I have possessed. All this was twenty years ago, and several times since then I have bought queens of this same breeder, and I have always found this strain of bees possessed of those same good qualities-industry, gentleness, and hardiness. In addition to this they cap their honey as the backs do theirs. I have frequently corresponded with this breeder, and with those who have bought queens of him, and I am thoroughly convinced that he has a strain of bees that are far superior to the general run of stock. If I were starting an apiary, for the production of honey, I should unhesitatingly stock it with this strain of bees.

This breeder has always advertised in a modest, quiet sort of way, nothing in proportion to what his stock would have warranted, and I have decided that I can help him, and benefit my readers, at a profit to myself, by advertising these bees in a manner behittingly energetic.

The price of these queens will be \$1.50 each. This may seem like a high price, but the man

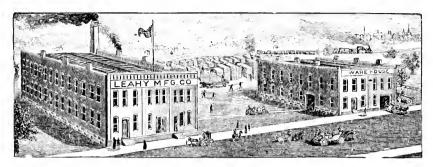
who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem so high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen SHOULD prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to every purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all; if, at any time within two years, a purchaser, for any reason WHATEVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble. It will be seen that the purchaser runs no risk whatever. If a queen does not arrive in good condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurly mated, another is sent. If the queen proves a poor laver, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is REALLY SUPERIOR.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price, and that is in connection with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review for 1900, can have a queen for \$1.00. That is, you can have the Review for 1900 (and 12 back numbers) and a queen for \$2.00. Of course, all arrearages must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arrearages and to pay in advance to the end of next year.

of course it is now too early to send out queens, but they can be ordered, either alone, or in connection with a subscription to the Review, and the orders will be booked and the queens sent later

W. Z. Hutchillan, Flint Mich.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superbindeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being briniful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. GO., Higginsville, Mo.. East St. Louis, Mo. Omaha, Nebraska.

Gontraction

Of the brood-nest can be made very profitable if practiced in the right manner, with the right kind of hives and apphances, in the right locality and in the right time of the season. The reverse will prove true if mistakes are made. Your locality may be one in which contraction, if rightly managed, would put many dollars into your pocke. All of these points are fully explained in one of the chapters of Advanced Bee Besides this, the CULTURE. book contains 31 other chapters on equally important subjects.

Price of the book, 50 cts.; the Review one year and twelve back numbers and the book for only \$1.25.

W. Z. HUTCHINSON,
Flint, Mich.

Page & Lyon,

Mfg. Co.

New London, Wis.

Nearness to pine and basswood forests, the possession of a saw-mill and factory fully equiped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free.

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

18-6 W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be utilized by the Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

3 PARDS. RAGES.

Golden Italian, 3 - Bauded Italian, and Holy Lands.

We have secured our stock from the best breeders of the U. S., and now we are able to offer the best strains of the best races in America. Queen Rearing is our specialty: we have been at it for years, and this department is under the immediate supervision of our Mr. H. H. Hyde. We want the address of every bee-keeper for our queen circular which gives prices and methods of queen rearing, honey production, prevention of swarming etc. Prices, either race:—

Untested June, July, Aug. and Sept.

75 cts ; 6 for \$4.25.

75 cts (5 for \$4.25).
All other months, \$1.00; 6 for \$5.00.
Tested, June, July, Ang. and Sept.,
\$1.55; 6 for \$6.75. All other months,
\$1.50; 6 for \$8.00.

Discounts for quantities. Select tested and breeding queens a specialty.

O. P. HYDE & SON,

1-00-tf Hutto, Texas.

Listen! Take my advice and buy your bee supplies of August Weiss; he has



tons and tons of the very finest

FOUNDATION

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered ere. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies—Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

19



ብብ

This is the original one - piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

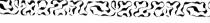
J. FORNCROOK,

Watertown, Wisconsin.

If the

REVIEW

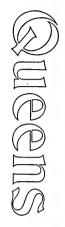
Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

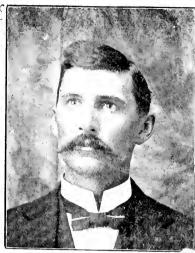


appa

LARGE

PROLIFIC





If the queens that you get from me are not such, send them back and get your money.

W. H. Laws-

Dear Sir: The bees from

your queens are the best honey gatherers I ever saw, and they certainly are beautiful.

H. C. Triesch, Alma, Ark.

W. H. Laws-

Dear Sir: I wouldn't take

a horse for the queen I got of you.

W. A. Jones, Bedford, Ark.

W. H. Laws,

ROUND ROCK, TEXAS.



The bees will soon be *right in* it. Prospects are bright for a good honey yield. If you have not already supplied yourself with hives, sections, etc., send for 40-page catalogue, free. We have the A. I. Root Co.'s goods by the carload. Can make prompt shipments at factory prices. Italian queens, 1, 2, and 3-frame nuclei at low prices.

JOHN NEBEL & SON, High Hill, Mo.

I have several hundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We al-

so carry a complete line of other supplies.

Catalog free. R. H. SCHMIDT & CO.,
9-99-tf. Sheboygan, Wis

Please ment on the Review

- If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

JOHN F. STRATTON'S CELEBRATED



Birmingham Steel Strings

for Violin, Guitar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catlg

JOHN F. STRATTON, Importer, Manufacturer and Wholesale Dealer^e 811, 813, 815, 817 E. 9th St., N. Y.

Please mention the Review.

1900 Queens 1900

For Business—Queens for Strong Colonies—Queens for large surplus. Competion in Quality, but not in price.

If you want queens, nuclei or supplies at botton prices, send for my illustrated price list.

12-97-tr

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

THE

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you streight.

If You Wish Neat, Artıstic



Have it Done at the Review.

Moore's strain of Italians.

If you want to secure a large crop of honey, if you want slowy waite comb honey that will bring the highest mark a price, if you want bees that are excellent relied over workers, bees that that are excellent re-led yer workers, bees that are gentle to him-die and hardy, in short, if you wint bees for business, stock your apirry with Morre's strain of Italians. Taey are the result of a years of careful breading, by selecting the best honeyeg thering stock each season from which to rear queens, and crossing them, as far as possible, with drones not akin.

If you could stend to you wifee, and read the

If you could step into my office, and read the stacks of letters from pleased customers, who court their colonies by the hundred, and pro-duce honey by the carload, I think that you, too, would soon be numbered as one of my

Prof. T. M. Barton, of Butler, Ky, one of our most popular citizens, visite I me last Feb'y, and perased many letters from my castomers. following is what he had to say in THE PENDLE-TONIAN, of M'ch S. 1900, our county paper pub-

lished at Falmouth, Ky — "It was my good fortune on Sunday to dine."

1. N. Marra of Morean, Ky. with my friend, J. P. More, of Morgan, Ky. Few of our people seem to know that this quiet, unassuming gentleman, of Southern Pendleton, is known all over North America, as one of the most skillful and subjected queen-rearers to be found mywhere. Mr More has patiently and skillfully libbred for the years to improve his logs, and the results are maryelus. The indistry, the prolificness, and the gentleness, of his becare the admiration of all who have tried ciem. Mr Moore's testimonials come from all points of the compass, and from men who sell honey by the cristoid. Fellow beekeepers, get a few queens from Mr. Moore, and put new life into your aparies, and you will think the e liter and me for this notice. I am glad to say that Mr. More is also a good Christian gentleman, and will patterns ienze and good will into all his business transactions."

From Braton, of Wishington, D. C., whose name is familiar to all progressive apiarists, writes me, Febry 29, 1200 as follows:—
"Three several times in the course of corres-

por fence, and in conversing with bee-keepers, had opposite answer the question: 'Where can the best Italians be get. It is perhaps not an easy thing to say, with certainty, but, at least, I have felt I might be able to tell where 6 000 ones could be obtained. A number have been referrel to you, for, although I have not tested your stock personally. I thought I knew pretty well, from general reput to in, its character. A bees o is personanty, i thought i knew pretty well, from general repart on its churacter. A beckeeper near here. Mr. Geb. A Lamphear, of Vienna, Va., who got some queens of you on my tee on nondition is so well pleased with them—in fact, gives your bees such a good recommen litton to me for gentleness and working qualities particularly their working on ted-clover, that I thought I would like to try some myself."

Last fall, I received a letter from J. F. Craue, of Middlebury, Vt., stating that some of his frients, who had tried my stock, recommended it very highly. I wrote Mr. Crane requesting him taging methe mames of his friends who had so kindly recommended my stock, and, in reply, he said

Mr. I, O. Thomps in of Weybridge, Vt., has received queens of y a that he prizes very high ly. Indeed, I believe he considers them, the best

he has received, from any breeder, for the production of honey.

I was not aware that Mr. Thompson was so well pleased, until I received the above letter; so I wrote him, at once, thanking him for his kindness in recommending my stock; and here is

what HE says:

"They are excellent honey-gatherers, nice to handle, sticking to their combs when handling them, not given to bunching up and roaming. This has been the worst season ever known in Vermont, and when I looked the bees over for winter, your bees had THREE TIMES as much honey as the blacks, and other strains. bees are not given to swarming; and that is one bees are not given to swarming; and that is one reason why I like them. I think they are as hardy as any bees I ever had. They seem to stind our severe winters splendidly. We went into winter quarters with 550 colonies."

Chas. G. Kinzel. Caswells Sta., Tenn., on Dec.

Chas. G. Kinzel, Caswells Sta., Tenn., on Dec. 29, 1800 writes thus:—
"I have just been looking over several copies of Gleanings. Among them, I recall an article from D. B. Lynch, Watertown, S. Dak., (See page 888, Gleanings, 1899) who speaks in very night terms of a queen purchased from you: I can testify to the truthfulness of that article. You will remember the nucleus I took from your house, Aug. 25,, which contained a select, tested queen. Arriving at home, I transferred them to an 8-frame, Dovetailed hive-body, adding another frame of comb-containing about 2 lbs. of honey. The next day I ad led to them a small colony of black bees—less than a quart. I then gave them 4 more frames about half filled out with comb, but no honey. They began to get a hustle on themselves, although there wasn't much for them to work on until the aster should bloom a few weeks later. When that did commence to bloom, the hive was chock full of bees; and you ought to have seen them work. They soon completed those 4 unfinished combs. In fact, the hive was overflowing with bees and full of honey; so I place I another story on top containing four empry combs. When I went to pack them for winter, these 4 combs were also full of honey. So I received from that nucleus, this fall, 22 lbs. of surplus honey, besides leaving fully 40 or 50 lbs. for them to wint ron."

Everybolly knows the A. I. Root Co., of Medina, O on Dee 8, 180). I wrote them thanking them for their kindness in publishing the article by Mr. Lynch, referred to above, and here is their

reply:
"Your kind letter of Dec. Sisat hand. thanks for your kindly appreciation of our hum-ble efforts in your behalf. It is not always that our endeavors to please are appreciated in this way. It is true that I have referred often to the high quality of your queens, particularly, as you have been carrying out my idea of breeeding for honey as well as for some other good, qualities." Yours very truly, The A. I. Root Co.,

Per E. R. Root.

Prices for 1900.

Warranted queens, in June, \$1.00 each; 6 for \$5.00,12 for \$5.00. Select warranted \$1.25 each; 6 for \$5.00, (12 for \$11.00). All reared by Doolittle's method Safe arrival and satisfaction guaran-

Circular describing each grade of queens sent free to all applicants.

J. P. MOORE, Morgan, Kentucky.

Good Goods. Prompt Shipments. Low Freights. Wholesale Prices

to Dealers.



ELMORE HUNT.

M. H. Hunt & Son of Bell Branch, Mich., have had about 20 years of experience in the manufacture and sale of bee - keepers' supplies. They have abundant capital, which enables them to keep on hand a large stock of goods, and thus be able to fill all orders promptly. For several

years they have been handling the goods of the A. I. Root Co.; and Michigan bee-keepers can save freight, and get their goods quicker, by ordering of this firm instead of sending their orders to Ohio.

To those who can command sufficient trade among their bee-keeping friends to enable them to buy in large quantities, there will be sent a dealers' list, which gives them wholesale prices. This privilege is extended only to those who order in large quantities, and can furnish satisfactory evidence that they are entitled to the dealers' list.

Market price paid for good, yellow wax. Put your name on a piece of paper and put it in the box, or write it on the box itself; otherwise there may be confusion when several lots arrive at the same time.

M. H. Hunt & Son, Bell Branch, Mich.

Violin for Sale.

I am advertising for the well-known manufacturers of musical instruments, Jno. F. Stratton & Son, of New York, and taking my pay in musical merchandise. I have now on pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, how and case. The violin is a "Stradinarius." Red, French finish, high polish, and real ebony trimmings, price \$14.00. The bow is of the finest snakewood, ebony frog lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and pearl dot in the end, price \$2.50. The case and pearl dot in the end. price \$2.50 The case is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is exactly the same kind of an outfit that my dauch ter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some in-struments here that cost several times as much. I wish to sell this on fit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be re turned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines. Iowa, manufacturer of and dealer in Apiarian Supplies. Send for circular. 1-96-6

Please mention the Feview

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

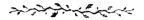
CATALOG.

We furnish a full line of supplies at regular prices, Our specialty is Cook's Complete hive.

J. H. M COOK, 62 Cortland St., N. Y. City



Superior Stock.



Every bee-keeper who has had experience with several strains of bees knows that some are far superior to others-that there is scrub stock among bees, just as there are scrub horses, cattle, sheep and poultry. Let me give my own experience. Years ago, while living at Rogersville, I made a specialty of rearing queens for sale. Before engaging in this work 1 bought Italian queens and Italianized, not only my own bees, but all within three miles of my apiary. In buying those queens I think that I patronized nearly every breeder in the United States; and even in those years of inexperience I was not long in noting the great difference in the different strains of bees. The queens from one particular breeder produced bees that delighted me greatly. They were just plain, dark, threebanded Italians, but as workers I have never seen them equaled. They seemed possessed of a steady, quiet determination that enabled them to lay up surplus ahead of the others. Fasier bees to handle I have never seen. It sometimes seemed as though they were too busy attending to their own business to bother with anything else. Their honey was capped with a snowy whiteness rivaling that of the blacks. In addition to these desirable traits must be added that of wintering well. If any bees came through the winter it was the colonies of this strain. They came as near being ideal bees as any I have possessed. All this was twenty years ago; and several times since then I have bought queens of this same breeder, and I have always found this strain of bees possessed of those same good qualities-industry, gentleness, and hardiness. In addition to this they can their honey as the backs do theirs. I have frequently corresponded with this breeder, and with those who have bought queens of him, and I am thoroughly convinced that he has a strain of bees that are far superior to the general run of stock. If I were starting an apiary, for the production of houey, I should unhesitatingly stock it with this strain of bees.

This breeder has always advertised in a modest, quiet sort of way, nothing in proportion to what his stock would have warranted, and I have decided that I can help him, and benefit my readers, at a profit to myself, by advertising these bees in a manner befittingly energetic.

The price of these queens will be \$1.50 each.

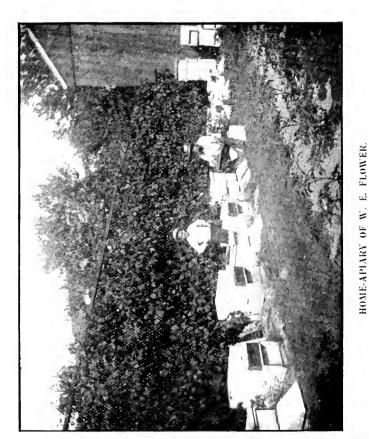
This may seem like a high price, but the man

who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem so high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen SHOULD prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed Instructions for introducing will be sent to every purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all; if, at any time within two years, a purchaser, for any reason whatever, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra-sent to pay him for his trouble. It will be seen that the purchaser runs no risk whatever. queen does not arrive in good condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurly mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the enstomer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is REALLY SUPERIOR.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price, and that is in concetion with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review for 1900, can have a queen for \$1.00. That is, you can have the Review for 1900 (and 12 back numbers) and a queen for \$2.00. Of course, all arrearages must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arrearages and to pay in advance to the end of thisyear.

Orders for these queens will be filled strictly in rotation, but all orders will be promptly acknowledged, in ease they can not be filled by return mail, and customers informed as 10 about when they may expect the queens.

W. Z. Hutchinson, Flint, Mich



ICALEALIANI OL M. L. LEOWEN.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers. \$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

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NO. 5.

ANAGING OF SWARMS, AND THE USE OF QUEEN-TRAPS. BY W. E. FLOWER.

Last October I told the readers of the Review some of the advantages that I derived from the use of queen-traps, and



mentioned, incidentally, that, at the end of seven days from the issuing of a swarm, I put in practice certain methods, which I have since been asked to describe, and, with the

editor's permission, I will now explain these methods.

At the end of seven days from the issuing of a swarm, and before the young queens have hatched out, I remove the old hive from where I placed it, (on top of the hive containing the new swarm) lift out all of the frames of brood, except one, and shake off the bees in front of the hive on the old stand. As there will be but little unscaled brood, there will be

enough bees left to keep up the warmth of the hive. This will prevent afterswarming; at least, I never have had one in the ten years that I have practiced this plan. However, to make a sure thing of it, destroy all but one of the queen-cells. By this plan, all the working force is kept at the old stand where the supers are. By hiving the swarm upon frames with starters only, there is no place to store honey in the brood-nest, and the bees are compelled to put the honey in the supers; and, as fast as they build comb in the broad-nest, the queen fills it with eggs. By this management, if ample room is given above, nearly all the honey will be carried up and stored in the sections. If the brood-nest is contracted to five L. frames, as it should be, very little if any drone comb will be built; while, at the same time, we gratify the bees' natural instinct to build comb, and afterswarming is prevented.

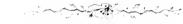
Very few, if any, of the old colonies will swarm again that season. Mine never do; but, in some localities, where the season lasts longer, they might possibly do so. Here the season commences with fruit-bloom in April, and ends with white clover in July.

After the first colony has swarmed, and the brood has been kept on top of the hive for seven days, if it is desirable to form nuclei, simply lift the top story off and divide the colony into two-frame nuclei; taking care that each has a queen cell. As most of the bees on these combs are young ones they will usually stay wherever they are put. As fast as the other colonies swarm, after keeping the brood on top of each hive for seven days, until it is mostly sealed, we can shake all the bees off in front of the hive to which they belong, and divide up the brood among the nuclei. If desirable to keep down increase, the brood from several colonies may be tiered-up three or four stories high on these same nuclei, and considerable extracted honey may often be obtained in this way; or, if the bee-keeper prefers, he can keep these well filled combs for winter stores; but, so long as I can buy granulated sugar for five or six cents per pound, I prefer to extract all the honey and feed sugar syrup in the fall. In this locality the bees seldom gather enough to carry them through the winter; hence I am compelled to feed. By this method I have been able to obtain one hundred pounds of comb honey from one colony; besides getting some extracted from the new swarms by tiering up the brood. This is not a remarkable yield when compared with other localities; but is nearly double the amount I used to get before I practiced contracting the broad-nest after swarming.

A few more words about queen-traps: I keep the trap on for three days after hiving a swarm; as, occasionally, I have what I call a "crank swarm," one that will come out and attempt to leave, or abscond, and no doubt would if the queen was not caught in the trap. This is another valuable point in favor of the trap, viz., that you can compel a swarm to stay in any hive you may wish. I never had one try to leave after the third day. After that time the trap may be put away for the season, unless it is wanted to catch and destroy undesirable drones. Right here permit me to say that I would not use or recommend the queen-traps

that are made and sold by most of the supply dealers at the present time. traps I use, and the kind I would recommend others to use, are the same as originally made by Mr. Alley There should be no way for the bees to get into the upper story of the trap except through the wire cones through which the queen and drones must pass to the upper story, or trap, and there should be no possible way for the workers to get out except through the perforated zinc at the top of the trap; and the front of the upper story of the trap should be covered with wire cloth. This will enable the bee-keeper to see the queen more readily, and she will remain more quiet and not worry and struggle and try to get out as she will through the perforated zinc.

ASHBOURNE, Pa., Feb. 3, 1900.



ANGER FROM THE IMPORTATION OR SHIPPING OF FOUL BROODY HONEY.
BY HARRY LATHROP.

For two years past the bee-keepers of Wisconsin have had only fair yields of



honey; but they have been favored by reason of a shortage in other localities, and an unlooked-for improvement in prices. Now, while there is a fair prospect for a crop in 1900, all indications point to a big

crop in California. This will have a tendency to lower prices again, as, if California has a crop, she will throw large quantities of it upon the Eastern market. The larger part of it will be in the extracted form. For this reason it may be that comb honey will move at better prices here than will extracted. Those who

are equipped for comb honey production would do well, therefore, not to change for the present.

A number of wide awake American beekeepers, have gone to Cuba during the past year. They report foul brood as being very prevalent there; and now comes a letter in the American Bee-Journal for Feb'v, 15th, from G. Rockenbeck, who went to Cuba last fall, and, at a point about 250 miles east of Havana, started in to try and cure a diseased apiary belonging to one M. J. Carbo. He tried all the methods in use in this country for the eradication of the disease but failed in every instance. In one of his concluding sentences, he says; "I don't believe there is a single individual in the United States to-day; who can cure foul brood here (in Cuba) by drugs or starvation." With such reports as these coming in, we American bee-keepers are not going to Cuba so fast as we were; and the question of Cuban honey competition is not so important as it was; but here is a question of importance: If it is true, as stated, that foul brood of a very malignant type is so generally prevalent in Cuba, is it right to allow honey from that island to come into the United States at all, while such a state of affairs exists, and while we are doing what we can to eradicate the disease, possibly in a milder form, from our own country? It seems to me it would be best for all concerned to exclude it, ves, better for the Cubans themselves, because, it may turn out that the best and cheapest way in which to get rid of the disease in Cuba is to burn up every thing that could possibly retain the infection, and start new with stocks imported from healthy districts in the United States. Therefore, if Cuba is to look to us for healthy bees with which to restock her apiaries, she does not want to do any thing to impair our chances of being able to furnish such stock.

Turning from Cuba to our own country, one would be led, from reading the reports of conventions in certain places, to conclude that the absence of foul brood

in an apiary is the exception in that country. I, for one, would not like to see any honey from those parts brought into the district where I am keeping bees. would not do to say anything about excluding Western honey, or there would be a big kick. There are large districts in Wiscousin where foul brood has never been known and our efficient inspector reports uniform success in curing up diseased apiaries. What we want are uniform laws in all the States for the suppression of foul broad, and, especially, laws enacted to prevent the sale and transportation of bees or honey from hives that are known to be infected. I said "hives" but would it do to say "apiaries?" In this matter of fighting foul brood, and its newly named relative, black brood, prevention should receive attention as well as cure; and the individual bee-keeper who has diseased bees should sacrifice some present benefit to the general future good. If he is not willing to do this, it may appear in the future that he should be compelled to do so. We all know that there is danger of spreading the disease if honey from infected apiaries is shipped to another locality. During the summer months a barrel of such honey left on a freight platform for ten minutes might be the means of spreading disease in a new district and cause an endless amount of loss and trouble. But enough of this for the present.

I think J. 11. Martin in the Review, has placed the tall section question in just the right light. I never intended to oppose tall sections as such, but I am opposed to such extravagant claims as have been put forth for them as to the yield of honey and their readier sale. If there is an advantage in a taller section why not make it 414 by 5 inches as suggested by Mr. Shrader in Gleanings of Feb'y, 15th, then all our old supers could be used by nailing on a rim to make them enough deeper. If such a section were no more than t12 inches wide and used with fences, it would ordinarily hold a great full pound, and would, I think, be a success;

but the little narrow thing known as the "ideal" is too small; it does not hold a pound of honey. The smaller we make the section the more we increase the labor and expense of production, and in the end there will be no increase of price to compensate us.

Browntown, Wis. Feb. 23, 1900.



OME POINTS IN HANDLING
HONEY, AS LOOKED AT BY
A DEALER. BY M. H. MANDELBAUM.

In the December issue of the Review I gave an article that caused some discus-



sion, which was not to my surprise, as I expected some offense would be taken. The principal points, on which explanation is desired, are the question of our selling comb honey as white clover, regardless of what

its source may be. In offering our trade, we are not going to the trouble of classifying the white honey any more than we will the amber.

As to placing the shipper's name and address on a case, I repeat the argument that his name should be on the package, so that if any complaint is make to us we will know whose honey it was. The shipper's address should not be on the package; for it is no one's business where the honey comes from; but is a subject only for the jobber who is experienced as to the product. If any shipper wants to advertise his honey, it is his privilege to do so; but when he sells to a wholesaler, he must be satisfied to allow the wholesaler to do his own advertising. again, some customers object to honey from certain localities, and we do not intend to be hampered with the address on the package; and will take care of that part of the business ourselves.

As to saying there was a moth in the Colorado honey, I am willing to rectify to the extent of saying that some comb honey showed where an insect had been on the comb, by partially destroying some of the comb and leaving a web. Whether or not this was a moth I cannot say, as I have never been in an apiary, and using that term only came from hearsay.

CHICAGO, Ills., April 19, 1900.



TOO HIGH. BY H. M. JAMESON.

I desire to say something pertaining to the very high prices on hives fixed for 1900 by the supply dealers. Some months since a subscriber to the San Francisco Examiner asked the editor if a man could make a living with 100 colonies of bees; if he understood their habits and needs. Answer: "No, the manufacturers and supply dealers get all the profits."

The manufacturers claim to day that there is a very small margin of profit on their output, especially on hives, it being only possible, on a cash basis, to live at these prices, owing to the high price of lumber; also that the output must be on an extensive scale.

We will see how much there there is in such statements. Let us be consistent with facts. Take the Union Hive & Box Co.'s price list, for example, and the eightframe hive-body, empty, as a basis. It takes about 4 and $\frac{2}{3}$, feet of lumber for this hive. The prices for this are, one, 50 cents; ten, \$3.40; twenty-five \$8.00; in the flat, with tins only. These prices will stand \$50 per M for lumber; leaving a good margin for profit and contingent expenses. I have a Barnes foot-power saw, and I can make \$3.50 per day of

eight hours with this toy machine, cutting and rabbeting hives, selling at the lowest price quoted, and pay \$50 per M for lamber. Excellent lumber can be purchased here, in car lots, or less, for from \$22.00 to \$27.50 per M feet. The strips from sizing and rabbeting offset the little waste. I defy any one to deny these facts and figures.

This combine, to get all the profits, is a reality that we must meet, or starve. How men (to say nothing of professing Christians) can even attempt to combat these statements, or justify their own, I Where lumber is cheaper fail to see. than it is here, these cormorants gobble up and down, bigger falsehoods and profits. The Review seems to be the only bee paper not shackled by a dovetailing machine. These leeches are, as they suppose, entrenched behind a redoubt of ignorance; but the bee men are not all fools. When such men as Dr. Miller say that hives, etc., are cheap enough, the ordinary poor man does not stop to think how misleading such savings may be.

I have taken as a basis the Union Hive & Box Co.'s price list; and I desire to say that I consider these men above the average in their class, and, personally, I feel friendly to them.

This letter is, I believe, in line with the stand the Review has always taken; excepting, perhaps, that of language.

CORONA, Calif. Feb. 13, 1900.

[While the above may be an extreme view of the case, I give it, as I wish every one to have their "say," so long as the language is not abusive. There is no question that the difference between the wholesale price of lumber and the price at which hives are sold in the flat seems great, but there are many expenses connected with manufacturing besides that of buying lumber. If a man can buy himself a foot-power saw, and has the skill to use it, it is quite likely that he can cut up lumber and make his hives cheaper than he can buy them. I have no desire, whatever, to uphold manufacturers in charging exorbitant prices; on the other hand, I know of some manufacturers who have gone out of the business because there was not enough profit in it to keep a going. Prices on these things usually find their level. If they are too high, somebody will go into the business and furnish the goods at a lower price. If they are too low, some of the manufacturers will drop out, competition will be lessened, and prices go up.—Ed. Review.]



EPARABLE QUEEN CELLS
AND THEIR ADVANTAGES.
BY H. E. HILL.

I note that the May Review is to be a queen-rearing number. This will be interesting. I had not thought of it before, but today the idea occurred to



me that, in getting out a special number on this line, every little idea would add to the completeness of the thing, and, perhaps, our method of having cells built would interest you. I accordingly exposed a

plate on some of the cells that we are now using, and if the negative is dry before the mail leaves in the morning I will enclose a proof from it, and if you think it worth while I will be glad to send you a picture a little later.

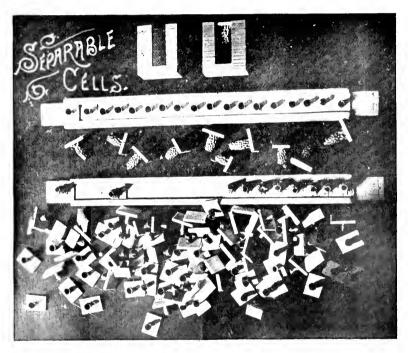
I am not an expert queen-breeder, and would not think of entering the competition for the "V," but if the idea is at all interesting to you I would simply say regarding it:

I believe the advantages of having cells readily separable and interchangeable will be obvious to the practicable queen-breeder, and the accompanying picture will serve to illustrate the method we have practiced for some time.

Where a large number of colonies are engaged in cell-building, the accepted cells of four or five colonies may be condensed to three or four, and another batch immediately given to the one thus liberated. The facility with which such cells are removed and inserted, either be-

by a fine circular saw, from section-boxes, by nailing a dozen or so together and cutting through them all at once, thus giving speed and uniformity.

The supporting slats have grooves on either side with a projection of one-eighth inch and of sufficient length to accommodate eighteen blocks. From the ends the blocks may be inserted or removed.



tween the top-bars of any hive to which it is desired that a cell be given, or in forming nuclei, is, I think, an important point in their favor; and the block to which the cell is attached affords the means for closing the only opening in the cage—the one which is to receive the cell.

The illustration, which shows a number of cell-cups, hatched cells, two of the supporting-slats and two nursery-cages, will, perhaps, more clearly explain the device than could the types. I might add, however, that the blocks, to which the cups are attached, are accurately cut

I rarely have occasion to use a nursery, but we have several especially constructed for this "block system," as shown. From one of these the wire-cloth front has been removed to expose the cell as it hangs in position.

We all have our favorite methods and pet whims, of course, but after having used nearly everything publicly advocated in the rearing of many hundreds of queens, I greatly prefer now to have my cells built in this way, and believe it will be appreciated by Review readers who may be sufficiently interested to adopt it.

FT. PIERCE, Fla., March 24, 1900.

HE DETAILS OF QUEEN REARING TOLD IN PLAIN LANGUAGE. BY H. D. BURRELL.

Our honey crops depend very largely upon the queens. A colony with a good queen often gives two or three times as much honey in a season as some other colony, apparently as good, with an inferior queen; therefore, it is very important to have the best of queens.

In rearing queens for our own use, or for sale, the selection of the queen mother is a matter of the utmost importance. Of course, we should take as much pains to rear the best of queens for sale. as for home use. The working qualities of the progeny of the queen should be the first consideration, and beauty the last, in selecting the queen mother. Hardiness in wintering, good disposition, comb building, and large, uniform size of the workers, should be considered in the order named. All the workers should show three yellow bands. Italian bees are almost universally acknowledged to be the best. Other varieties of bees have good points, but not enough to make it worth while to have them replace good Italians. Some hybrids are excellent workers, but their temper, and their transmission of good qualities, are too uncertain.

The huslands of our queens should also receive attention. With wired foundation, and some care in replacing drone comb with worker, and fitting a large amount of drone comb in a few choice colonies, it is possible to have nearly all choice drones reared at home. If near neighbors have bees, it will be necessary to have their bees Italianized.

Probably, queens reared under the swarming impulse, or where a good stock is preparing to supersede a failing queen, are the best; although very good queens may be reared at any time in the working season if the cell-building colonies are rightly managed. All queens rearing colonies should be kept strong and fed

liberally when there is not a good flow of honey.

Good queen cells can usually be obtained by removing a comb of eggs or just hatched larvae from the colony containing our choicest queen, cutting oblong holes in it, and inserting it in a prepared colony; but, in my experience, the most satisfactory results can be attained by using the Doolittle cell-cups and grafting larvae into them. I have tried many plans for getting queen cells, but this is the most satisfactory of all I have tried. Some may not understand the Doolittle methods, so I will try to briefly describe them.

Get a hardwood stick about as thick as a lead pencil, and shape one end like the inside of a queen cell cup. Melt equal quantities of rosin and beeswax in a tin cup. A small glue pot is handy to avoid danger of burning the wax. Dip the stick alternately into cold water and into the melted wax until the base of the cup is about one-fourth of an inch thick, tapering to a very thin edge at the open end: the whole being about five-eights of an inch long. Cut a piece of thin framestuff the right length to fit snugly inside the end bars of a brood-frame, horizontally, and, with melted wax, attach the thick ends of the cups to the wide side of the stick. Cut away the lower half of a brood-comb and attach to it securely the stick of cell-cups, open end down. With a small spoon, made from a quill, put a small amount of rather thin royal jelly in the bottom of each cell-cup. If royal jelly is not likely to be found readily in colonies preparing to swarm, a eolony should be made queenless five or six days before we wish to start queen cells. From the queen mother colony carefully remove, with the quill spoon, larvae not over one day hatched, and put one on the jelly in each cell-cup. If the temperature is below 80°, outside, all work with brood should be done in a warm room, and the brood wrapped in warmed flannel while exposed to a lower temperature. Insert the frame of cells in the middle of

a previously prepared colony. For this purpose find a strong colony preparing to swarm, or supersede a queen, and remove all queen-cells. If there is no such colony, remove the queen and all the brood from a strong colony, and confine the bees to the hive for about twelve hours, ventilating and shading well to prevent smothering the bees. Just at night, too late for bees to fly, put in the prepared This method will so alarm the bees that they will be very anxious to rear queens, and will usually rear very good ones. Most of the cells will be accepted, but, for the best results, not over ten should be left for the bees to mature. All above this number should be destroyed before they are far advanced. As soon as the cells are capped, they may be removed and another lot of cells given the colony; but not more than two lots should be given to one colony, for the bees are apt to become tired or discouraged, and fail to raise the best of cells.

The frame of capped queen-cells may be placed in any strong, queenless colony that has no other capped queen-cells; or in the super of a strong colony, above a queen-excluder. Careful records should be kept of all operations, and frequent observations made to verify them, else some of the young queens may emerge from the cells and destroy the others. The cells will be capped, usually, in five days after the eggs hatch: and the young queens emerge eight days later; but, for safety, the cells should be placed in nuclei on the seventh day. Nurseries are sometimes used to receive the hatching cells, and the young queens from them introduced where they are wanted: but it is usually difficult to introduce unfertile queens successfully, and it will be more satisfactory, generally, to put the mearly-ready-to-hatch cells in nuclei.

In putting a queen-cell into a nucleus or hive some advocate putting it into a hole, cut into a comb, but that plan is troublesome, and mutilates combs unnecessarily. If the cell is pressed between the topbars, in a perpendicular position, over the

middle of the cluster, it will do as well. Sometimes the bees will tear open the cell and destroy the young queen. avoid this possibility, use the West queen-cell protectors (sold by supply dealers); or cages may be made cheaply at home. Bore a hole with a threeeighth bit, one and one-half inches deep in a hardwood block. With a sharp knife cut the hole funnel shape, and about three-fourths of an inch across at the outer end. Cut a piece of common wire cloth about three inches square, and with the square end of a led pencil on the middle of it, crowd it to the bottom of the hole in the block of wood. Then force the pencil, sharpened end first, through the small end of the cage, and it is ready for use. Put the queen-cell in the cage, the small end to the hole, twist the flaring corners together, and the bees will not destroy the cell. Never shake or handle queen-cells roughly.

Usually, in seven to ten days after this the young queens will be found to have commenced laying, and are then ready to use or sell. If we wish tested queens it will be necessary to wait three to four weeks longer to see if the hatching bees are pure Italians.

For nucleus hives, where many queens are to be reared, small boxes to hold four small frames are desirable. These small frames should be of such size that two of them, minus top-bars, will fit snugly inside of the regular brood frames. Top-bars may be tacked to these frames in such a manner as to be readily removed; then the nuclei are readily united for winter. Some advocate killing nuclei in the fall, but this seems too cruel; although the bees from nuclei are apt to winter poorly in hard winters. Two good nuclei may be put in a standard hive with a close-fitting division-board between them.

To put bees into nuclei, and keep them from returning to the parent hive, is quite a problem. When formed from queenless colonies, the bees will usually stay quite well, if queen-cells are given them. The surest way, however, is to move a colony or colonies a few miles from home, and, after a few days, cage the queen and form nuclei of the bees and brood. Bees will usually stay in nuclei quite well if they are shut in for twenty-four or thirty-six hours, then well smoked and drummed before they are released, and a board leaned against the entrance for a day or so for the bees to fly against when they come out. Each nucleus should contain one or more frames for brood, a pint to a quart at least of bees, and should always be supplied with young brood.

A few good queens may be reared for home use by grafting brood from our choice queen into natural queen-cells where bees are preparing to swarm. Mark the cells by pushing wire brads through comb near them; watch closely, keep a record, and use the cells at the right time.

SOUTH HAVEN, Mich., April 17, 1900.



HE BEST SIZE OF FRAME FOR QUEEN REARING.
BY W. H. LAWS.

The greatest expense in the rearing of queens is that of bees for the forming of nuclei. If it were possible to mate our virgin queens without placing them in nuclei, or hives of bees, we would accomplish that which would cheapen prices and revolutionize the queen trade. This, however, will probably never be done; and so long as the world stands, queen bees will be successfully mated only by flying from a hive of bees. So we queen breeders, of a necessity, have to face this evil of tearing up our good strong colonies of bees and forming them into nuclei from which to mate our queens. To make a number of nuclei, from the L size of frame, sufficient for the average queen breeder, entails the almost total destruction of a large apiary; and thereby relieves us from all further anxiety and trouble concerning the harvesting of a crop of honey that season.

Then it occurs to us that if those colonies had remained intact, possibly the crop of honey when sold might have equaled the amount received from sale of queens; to say nothing of the skill and labor necessary to successful queen rearing. To overcome this difficulty, queen breeders have sought to use a smaller frame, but pretty generally, after a disgusting trial, fall back to the standard frame; having to learn by experience that nuclei cannot be maintained without full colonies on the same size of frame from which to back them up with honey or brood as they may need. The writer, having tested every size of frame, from the pound section up, feels free to speak, The smaller the frame the less satisfactory the results: but much better results can be secured with a smaller frame than one of the L size. As an experiment, a number of bees from box hives were transferred into little frames, three of which just fitted snugly into an L frame and occupied the standard hive until time for nuclei making. Two hundred and fifty nuclei were formed from these little frames, but, as they had closed ends, they did not work well in full colonies. and at the end of the second season were abandoned.

As a final effort, another plan was tried which worked so well that its use has been permanently adopted in my queen rearing and mating yards. A square frame for nuclei is by all odds the best, A long, shallow frame, such as the L size is out of proportion; and soon only one end or the other will be occupied by the bees. After seeing so many of this size in use, where the bees with brood are in one end of the frame, and perhaps honey in the other, it seemed a pity that those combs could not be hinged, or cut in two, which would allow us to swing the honey end around against the brood. Acting on this idea, in the year 1893, forty colonies in two-story L hives, on 16 frames, were brought in from an outvard, the upper stories being pretty well filled with honey. The intention was

that every one of these combs should be halved perpendicularly, and a top bar nailed to the raw edge of each piece. The same was accordingly done, as follows: After forty two-story hives had been prepared, made especially to hold these square, half-size hanging frames crosswise, the bees were all shaken from the combs of hive No. 1, the combs carried into the honey-house, each frame had its projecting ends of the top-bar sawed off, then laid flat on a bench, and, with a board measure of proper size laid directly on the comb, the saw was made to cut square across the center, through wood, comb, brood, honey and all. were then nailed on as before indicated, all hung in the hives, which now held 13 of these frames in each story, and returned to the bees. Each of the forty colonies were thus treated, and at the proper time these colonies were made into nuclei by taking two frames (one of bees and brood and one of honey and bees) and placing the same in little hives specially prepared for holding two of these nuclei. Of course, there was some destruction of brood, but with plenty of honey, the loss was soon repaired, and the bees adapted themselves to the change immediately, as might have been expected, and now we have an ideal frame for queen rearing.

After a good many years' use of this size of frame in full colonics, in connection with the standard frame, I find it handles well for almost all purposes, as well as filling the bill for making good nucleus colonies with fewer bees than by any other method or size of frame. After a thorough trial I was convinced that the proper thing had been found, were made, swarms were hived, and whole apiaries have been kept on this size of frame made especially for queen rearing. They can be used two, three, or four stories high, when necessary, honey extracted, and there is nothing nicer than several hundred of these full combs carried over, one for each nucleus the following season. In this way I have

formed twenty-four nucleus colonies from one hive of bees in one season.

One lesson learned, worth remembering, is that no queen rearing frame, or nucleus, or method, can be a success without bees in full colonies on the same size of frame as that used in the nucleus, provided they are to be used the entire season for queen rearing. My nucleus boxes have room for five frames each, and I have known a two-frame nucleus to build three additional combs, and store enough hôney for their winter's supply. After the season for queen rearing is past, the nuclei can be all united into full colonies, and can be used again the following season.

ROUND ROCK, Texas, March 19, 1900.



OMMERCIAL QUEEN REARING IN ALL OF ITS DETAILS. BY W. H. PRIDGEN.

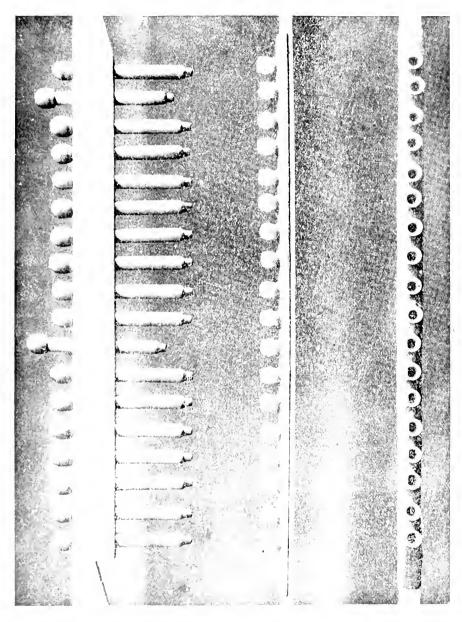
The Prize Article.

Very few queen breeders now allow the bees to construct their own queen-cells. The cells are dipped, and fastened in



some way to a stick and then supplied with just hatched larvie. If only a few cell-cups are needed they may be dipped by using a single dippingstick, dipping a single cell at a time; but this is too slow work where there are

many cells to be dipped. The dippingstick should be not larger than five-sixteenths of an inch in diameter. The tapering part should be five-sixteenths of an inch long; reduced rapidly the first one-eighth of an inch, and then gradually reduced to the end. It should slip into a worker cell one-eighth of an inch before



filling the mouth of the cell, and form a sink in the wax cup that will bear sufficient pressure to make the cocoon fit snugly without touching the bottom. The accompanying illustration shows my first plan for dipping a large number of cups at one time, and attaching them to slats by means of melted wax; but the time has arrived when cell-cups will be on the market, and we need a bar to which they can be attached without melted wax. One, a half inch square, to fit between the end bars of a broad-frame, with eighteen five-sixteenths of an inch holes bored nearly through, and five-eighths of an inch from center to center, furnishes just such a bar.

Only one round nail should be used at each end when fastening it in the frame, so that the holes can be turned out for the cups to be inserted and the larvæ transferred, with the frame lying on its side. The bars should be immersed in hot wax before put in use, and if the larvæ only is transferred the cups should first be slightly pressed into the holes with a peg that fits the bottom; but if the cocoons be transferred with the larvæ, it is only necessary to set them over the holes, and the slight pressure necessary to make the transfer will also tighten the cups.

The bar should be put across the center of the frame, and the space above it, except a bee space immediately above it, be filled with a thin board nailed in. There will be no necessity of ever taking the bar out of the frame; as, if provided with wire loops, the nursery (see page 152) can be slipped over the cells in less time than it takes to count them, and the queens removed as they emerge; or the cells can be detached and used in the usual way, by simply running a knife between them down to the bar, and prying them off.

To dip cell-cups that are smooth inside, the first dip must be full-depth, and the others varied according to the temperature of the room and wax. Usually the second dip should only be half way up, and then the third one will finish it, unless the wax is too hot, and should be nearly full depth.

The use of the new cell-bar will simplify the dipping of cups wonderfully: as any number of the forming sticks can be made fast in a board, in rows of suitable distance to admit of conveniently removing the cups, or the sticks can be made fast in the bars, as teeth in a rake, instead of loose as shown on page 147, and a number of these sets can be fitted into a frame and all dipped at once, by having blocks of varying thicknesses or some other arrangement, to be adjusted while the wax is cooling, after making a dip, for the frame or board to come down on. to change the depths of the different dips. It is not necessary to make the base of the cups heavy, as is the case when they are to be stuck on slats with wax, and the sticks need not be varied from a perpendicular position, but simply give a little jerk to dislodge the drops as soon as they form on the points, to prevent having long necks to the cups.

The latest machine dips them by turning a crank, and the pins have two They go around, like the motions. spokes in a wheel, and they whirl, or slowly revolve, as they go around, which keeps the wax spread evenly around until it sets, which prevents the long points that are so bothersome when dipped by hand The wax must be the right temperature and the dipping done by a steady, slow movement. If moved too fast the wax will be forced up too high on the pins, and make the cups with a long side and a short one. Although they are turning while in the wax, they will not turn entirely around while at the deepest point.

The pins are arranged on the circumference of a wheel but not put on entirely around the wheel, and after all are dipped, and the point reached where no pins touch the wax, all is suddenly raised sufficiently for them to miss the wax, and another revolution given without stopping the wheel, followed by a pause for

cups to cool, and then repeated until the cups are sufficiently heavy. Then the wheel is carried over to the water trough and the cups removed. If the weather is cool, the water should be kept at a temperature of about 100° Fahr., to make the cups slip off easily.

The machine automatically varies the depth of dip by means of a plate with a thick side and thin one, that is moved around one notch every time the point is reached where no pegs touch the wax. Over this is arranged a piece of hoop iron that moves up and down, on which the thumb screws rest that are used for adjusting the machine to the quantity of wax, and for lowering it as the wax is used up.

As queen breeders generally will not consider such a machine practical for making cups for their own use, as more simple arrangements can be used for securing satisfactory cups in a wholesale way. I will not go into all of the particulars, but will add for the benefit of those who want to make them for sale, that the pins should have sharp shoulders the right distance from the points to give the cups the desired depth, which will trim each cup to a uniform depth, and remove the feather edge so liable to be broken off in handling. It should be a square cut in, and the cup made on the head or larger portion. The cells made on pointed sticks are just right for use when the transfer is made by using the cocoon and there is nothing to do when they are placed over the holes but make the transfer and they will be fastened in the bar at the same time. If larvæ only are to be transferred, a peg the same size and shape of the transfer stick, except the end should be round and smooth instead of concave, can be used for pressing the cups in the bar, which will stretch them and make them the right shape inside. No attempt should ever be made to fasten them in unless they are soft enough to mash up without cracking.

Inasmuch as the bees more lavishly supply larval food to royal larvæ than to

worker for the first three days, and all agree that the resulting queens are no worse for it, while the experience of many verifies the fact that they are better, I prefer a plan of transferring whereby newly hatched larvæ can be used. This is done by supplying the creeder with combs so old that the bottoms of the cells have lost their hexagonal shape, and are thick and dark. A piece of such comb may be shaved down with a keenedged, slightly heated knife, so as to cut it smooth, within 18 of an inch of the bottom of the cells; and, by bending it back and forth, the cocoons will drop from it, unless it has been sufficiently exposed to moisture to mould

It will be found that all do not work alike; some seem to be glued in, while others almost fall out, with all degrees

> between, but usually they can be transferred by taking them up on the transfer-stick, herewith shown, which is sufficiently rounding at the points to slip into them without bruising them; although they may be stretched a little thereby, which should be the case. The end has a funnel shaped cavity in it that fits over an egg, or small larva, and takes the cocoon up, fitting like a gun cap on the tube, which by a slight pressure and little twist, is transferred to the cup.

It is more satisfactory when the comb is old enough so that the outside of the cocoon is black and glossy, and any adhering thin tissues that are liable to come above the edge of it in the cup can be rubbed from it while it is on the stick. Whenever only a transparent tissue is taken up it is useless to insert it into the cup, as it has not the stability to preserve its form while the transfer is being

made. Whenever they loosen up by simply bending the comb back and forth

there is nothing to do but insert the transfer-stick and take them up; but, with other pieces of comb, it may be necessary to slightly work the stick back and forth as though it is to be shoved or pulled out sidewise before it will adhere. After one has been stretched too much to fit the stick it cannot be taken up. Slightly waxing the end of the stick may help in obstinate cases.

I prefer using larvæ too small to be seen, that are surrounded by clear or slightly milky food; but those larger than the head of a brass pin can be transferred.

When only a small wet spot can be seen in the bottom of the cell the larva will be accepted all right by queenless bees; and one can rely upon being on the right side as to age, as well as certain of the fact that it has been amply fed up to the time of the transfer; especially so if the comb be given to bees anxious for larvae to feed a few hours before.

The same comb will usually supply larvæ for three or four days if kept in the breeder's hive as long; and by returning the combs to the breeder after the brood is sealed, there will nearly always be one from which the bees are hatching solidly, which will be filled with eggs just as fast as the bees in the breeder's hive feel the need of brood to feed. In this way only one set of combs need be cut.

Some report better success when transferring larvæ only if no royal jelly be first put into the cups, as the bees begin to feed them as soon as they are transferred. It certainly should be floating in the milky food before it is transferred; and at times when it is sticking to the bottoms of the cells with only enough around it to keep it living, good queens need not be expected if such be used. Then it is that the comb from which it is to be used should be given to bees without brood at least twenty-four hours in advance.

The majority will be more successful in having cups accepted, and attain bet-

ter results, if they first be given to bees deprived of both queen and all unscaled brood from six to twelve hours previously.

Nursing begins the instant they are given, if the bees be long enough queenless to receive them, which is of vital importance, as the larvæ once neglected are slow in development and result in dwarfed queens.

In preparing bees to start cells, it hastens matters wonderfully if they be shaken from the combs, whether it be from the combs of one hive on to those of another, or right into the same hive.

When they are thus disturbed they begin to search for the queen immediately, realizing, I suppose, that she is liable to an accident under such treatment, and they act very much like a swarm when the queen is missed.

If shaken from the combs of a normal colony on to combs minus brood, from three to six hours is ample time and sometimes the cups have to be given sooner to quiet them.

At the time the greatest distress is shown is when they will accept the greatest number, and the chances for the best results lessen as they reconcile themselves to their condition.

If one is making a business of queen rearing he should keep a colony at work as cell starters. Fill a body with combs of brood and place it over the colony selected, with an excluder between. Twelve days later place this body on a bottom-board, minus the most of the board, with wire-cloth tacked on as a ventilator; stop the entrance so that no bees can escape; shake the bees from the combs and examine them for cells, removing any that are found.

Substitute a comb one-fourth full of water, for one in the hive, or pour a little water into one, as they will consume quite a bit when thus shut up, and remove as many more as there are batches of cells wanted, to make places between other combs to receive them.

The bees will cluster in the spaces thus formed, and the cups can be inserted be-

fore many bees escape, which they are anxious to do.

Regardless of the kind of hive used, there should be a cloth over the frames before putting on the top, so that it can be gently rolled back and the bees smoked, until the spaces are reached, to avoid their escape.

The greatest number of cups I have ever given was thirty-six, and have had as many accepted.

Usually I prepare the bees about 9:00 o'clock, a. m., give them the cups at 1:00 to 3:00 o'clock, p. m., and wait until the next morning to remove them.

Mr. W. S. Pender of Australia, allows queenless bees to work on one batch two or three hours, and then gives another, and so on, but, as I know they will accept as many as two batches all right, late in the evening they and adhering bees can be given to cell builders, and the balance set back over the excluder, ready for the same operation the next day, or whenever desired.

At this date (April 4) I am unable to experiment and ascertain how short a time the allowing of the cups with the cell starters will suffice, but, of course, Mr. Pender knows.

When this stage is reached another boly should be filled with combs of brood and placed over the excluder, and the one just used for the cell starters put on it when it is returned. Then, when the top one is set off to prepare the bees for accepting cups, some can be shaken from two or three combs of the one immediately below it, which will be sufficient to start the excitement.

In ten or twelve more days, all of the bees will have emerged from the top set of combs, and all the brood in the second set given will have been sealed, so that the first set can be disposed of, another set with brood prepared, and the second set come into use in having cups accepted. At these intervals the giving of brood and removing of combs can be kept up during the season, and the bees worked as described daily, or nearly so. Every time a new set is given those previously

given should be examined for cells, and the cells removed.

The brood given keeps up a strong force, although some bees are removed each day with the cups to the cell builders. When no honey is being stored the colony should be daily fed a sufficient quantity of syrup to fill the combs as the brood hatches out.

The main point to keep in view is, that whether bees are confined, or made broodless and queenless on their stand with liberty to fly, they will accept cups in a few hours after the queen and all unsealed brood are taken from them.

In preparing a hive to have cells built above an excluder, with a laying queen below, the excluder should be nailed to the top body, and have a bee-space between that and the frames above and below. If the hive is wide enough to take ten frames and a division board, a tight fitting board can be tacked in the center, to the excluder, and form two apartments, holding five combs each, thereby doubling the capacity of the colony for cell building, without ever taxing it to feed more than the usual number at any one time, by giving a batch of accepted cups in the center of one apartment, between two combs of either sealed or unsealed brood, and as soon as they are sealed, say five days later, place another in the other. This gets it into working order, and one batch can be removed and another given every five days.

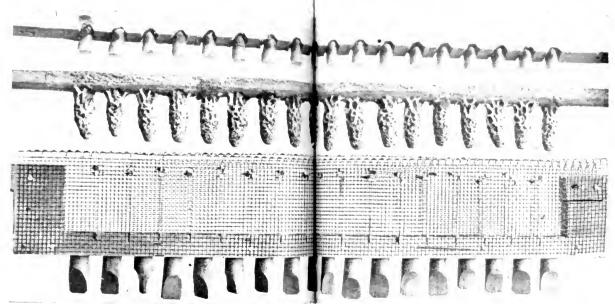
Whenever cells are built by queenless bees, if nuclei are to be formed, a sufficient number of combs of brood and the adhering bees should be placed under them as soon as they are sealed, to furnish at least one comb for each cell. Just before the time of hatching, the cells should have a nursery slipped over them, and then the nuclei can be formed and queens given as fast as they hatch; or, say twice a day, as all will not hatch at once. No doubt it is better to form the nuclei late in the evening, so that the bees will become accustomed to their changed conditions before they can fly.

Another lot of combs, bees and cells can at once be placed on the same stand to catch the returning bees and worked in a like manner, to be again and again repeated if necessary, but, of course in the latter case, care should be exercised in selecting all sealed and hatching brood.

allowing the queens to hatch out in a nursery hereinbefore stated, all is ready to form nuclei, without having unsealed broad in the combs to starve as is often the case when drawn from normal colonies besides, bees thus treated will remain in the nuclei better than those

After ascertaining how to have virgins or cells accepted, that is, to bring about the conditions necessary under varying circumstances, it is not only a waste of time, but often proves to be a loss, to open a nucleus from the time a virgin is two days old until the time for her to be

next morning. A stroll in the evening among those containing oneens of mating age will often save time, as there will be considerable distress manifested where a queen has taken her wedding tour and fuled to return, which is sometimes kept up until the next morning, but usually



CELL-CUPS, COMPLETED CELLS AND QUEEN-NURSERY, 18 N. H. PRIDGEN, CREEK, NORTH CAROLINA

as the combs will be used within two taken from a colony with a queen, even if days for forming nuclei.

When queenless bees are not used as cell builders a queen can be removed from a colony and other bodies piled on provided in a like manner a few days before nuclei are to be formed, and by cells be given, instead of queens.

After getting the bees in shape, to be ready for forming nuclei, they should be fed all the syrup they will take every evening, until the divisions are made. except during a flow.

laying Virgins are hard to find, and the bees often act as though they were queenless while the virgin queens may be present and, worst of all, often kill them if to honey is being stored, if disturbed.

It tirgins are given and not accepted they can often be found near the entrance

by that time all is quiet. Such cases should be noted, and cells or oneens given the mad day

The tin divisions in the nursery are Pax's inches, and are slightly let into saw kerfs at the bottom, and are is of an inch apart, thus forming apartments about 112 inches deep, and 58 square. The pegs have holes in them for holding the candy, and should be dipped in melted wax before being used. If one has them, cartridge shells can be used instead.

To remove the queens one should be provided with a number of cages, made by rolling up small pieces of wire cloth into tubes three or four inches long, with one end pressed together or closed, while corks or bits of comb make nice stoppers If the queens are too for the other. young to fly a number of pegs can be withdrawn all along, and the queens allowed to crawl into the cages as they come out, without ever allowing two to clinch, as it almost invariably means death to one. When this is being done the nursery should be lying on its side, and the queens can be distributed by simply allowing them to crawl from the cages down between the combs, or in at the entrance, and give a puff or two of smoke behind them.

If they are to be kept in a nursery very long, for any purpose, they should be transferred to one minus cells, as the space is small and they are liable to get wedged up between the nursery and cells, and perish in attempting to find a way of escape.

In removing those old enough to fly only one peg should be removed at a time, and the cage should be placed right over the hole. The operation can be hastened by inverting the nursery.

In slipping the nursery over the cells (which is held in place by drawing the wire loops already on the bars over the ends), the tin will cut its way unless an unusual amount of wax has been used in joining them together, as is sometimes the case when the bees are auxious to build comb; and when that is the case they should be separated with a hot, thin knife.

If the cells instead of queens are to be given to nuclei, the nearer the time of hatching the better, and, as they seldom hatch on the orthodox 10th day, if larvæ

of the best age are used, it is quite a convenience to attach the nursery and feel easy until they do begin to hatch.

If the division be made when the bees are flying freely all can be shaken from the comb or combs of unsealed brood, and the returning bees will be sufficient to at once protect it.

As soon as virgin queens reach the combs they begin a search for honey, and bees seldom attack a queen while in the act of securing nourishment. No attempt should be made to introduce a virgin by simply releasing her in the hive after she has become very active, whether it be those held in the cells by the bees, as in cases of second swarms, or that have been in a nursery, unless it be to the bees surrounding them.

During a honey flow the feeble, downy-looking misses can be given the same day the laying queen is removed, with a considerable degree of safety. I have thought that it is safer to give them at once, than any time afterwards, before the bees fully realize and reconcile themselves to their queenless condition. If given to colonies with feeble, old queens they will often be accepted and commence laying with the old queen in the hive, as is the case with supersedures.

When I have a surplus I often release them in colonies having old queens and allow the bees to take their choice between the old and the young.

Virgins at the age of two or three days or older can be shipped from the nursery, if escorts from the same hive be used.

Another consideration in the use of so simple and convenient a nursery, is the saving of time with nuclei. A virgin can be given as soon or sooner than a cell, regardless of the conditions, and the time between the giving and hatching of the cells is saved, besides, fine looking cells often fail to hatch, and it is not uncommon for others equally fine to furnish queens deformed, and that should be discarded instead of consuming valuable time in a nucleus.

While 1 prefer allowing the bees to have access to the cells until within a day

or two of hatching, so as to add to or take wax from them as they see fit, sull, if the proper temperature be maintained, and, as they can be inserted without rough handling, or changing their positions, it can be done any time after all are well sealed; and thereby reduce the number of days of queenlessness when built by queenless bees, or allow the giving of a fresh batch oftener to those over an excluder.

In multiplying nuclei the reasons for leaving the queen and unsealed brood on the old stand is that the field force and enough comparatively young bees return to it to feed the larvæ and keep the queen laying, leaving the others in a better condition to receive a young queen, which will have a field force by the time she begins to lay, and bees hold more tenaciously to the hive they have for some time occupied, and will sulk when the field bees quit coming to it, instead of deserting the brood as they often do when given a new hive and location without their queen.

If the queen be carried to the new location she will be comparatively idle until the bees begin field work, whereas, at the old stand she is kept busy.

CREEK, N. C., April 14, 1900.



SEVERAL ARTICLES on queen rearing a good ones are from necessity left out of this issue. They will appear in later numbers.

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Long Bottles are used by Mr. J. L. Strong as stakes upon which to set his hives. He secures plenty of them by paying boys five cents a dozen for them. This I learn from the American Bee Journal.

THE REVIEW'S NEW COVER.

The trees have donned their summer dress, and the days have come when we can sing:

"Now is the time for the dress that is lawny,"
Now is the time for the shoe that is tawny;"

and why shouldn't the Review come out in a new summer suit? Perhaps it is no more beautiful than the old dress of cream and claret, but a change is sometimes agreeable simply because it is a change.

AN IMPROVEMENT IN THE FERRIS WAX EXTRACTOR.

Whether the discussion of a year ago in regard to the need of pressure in getting all of the wax out of slum-gum stirred up Mr. Ferris to further invention in that direction, I do not know. Be that as it may, he has added a screw and follower that can be applied while the slum-gum is still under steam heat. It would seem as though this left nothing further to be desired in the line of wax extractors.

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RAPIDITY OF FLOW is something that should be considered carefully, says Mr. R. C. Aikin in the American Bee Journal. By this we may judge how many sections to give, and how soon to give them in tiering up, etc. He says that this matter may be determined much more rapidly by having a colony or two on scales. The scales will show the tendency of flow two or three days sooner than it will be shown by an examination of the sections.

HEAVY LIFTING of hives of honey is avoided by Mrs. A. J. Barber by putting bed-casters on a board made to fit upon her Daisy wheelbarrow. The hive for holding the extracting combs is set upon this board, and when the hive is full the wheelbarrow is trundled up to a platform of just the right height so that the board

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with the casters can be pushed off the wheelbarrow upon this platform and rolled into the extracting room; all of which is told in Gleanings.

BAIT COMBS, when placed in the corners of the supers have a tendency to keep the outsides going so as to be completed as soon as the center, says R. C. Aikin in the American Bee Journal. He considers them of much importance with a weak colony and in a weak flow. He would use them even if the honey had to be extracted.

BELGIAN HARES are beginning to attract considerable attention. I mention this as it seems to be one of those industries that may be combined with beekeeping. Prof. Cook has an article on tais subject in the last American Bee Journal. I may copy it in some future issue. These animals are valuable both for their far and their meat. At present the demind for them for breeding purposes is so great that it takes nearly all of the first-class stock that is reared. This condition of things is likely to last until the country is well stocked, and those who go into the business at once will be likely to make the most money. A rabbitry is being built within three blocks of this office, and the very best of stock has been purchased; \$250.00 being paid for one animal alone.

********* HONEY-OUOTATIONS.

At the Philadelphia convention last fall the matter of honey-quotations received quite a little discussion, and it was evident that the exact meaning of the quotations was not correctly understood. Some thought that the prices given were those that would be remitted to the shipper. Others believed that from these prices must come freight, cartage and commission. Others thought that the prices were those at which the grocers retailed the honey, and that the commission men sold it at a lower figure. I will not attempt to give all of the differ ent views that were expressed. To settle the matter, I wrote all of the dealers who give quotations in the Review, and the gist of the replies is given just above the quotations in the market column, and will remain there all of the time, that no one may forget.

RIGHT AGE OF BEES TO ACCOMPANY OUEENS IN SHIPMENT.

Mr. G. M. Doolittle, who has quite a faculty of finding out useful and helpful things, tells, the readers of the American Bee Journal that one cause of loss in shipping queens is that bees of the right age are not chosen for an escort to the queen. Too old bees, or those so young that they have never flown and emptied their intestines, are not suitable. They ought to be young bees that have taken at least To decide which are the one flight. bees of the right age we have only to open the hive carefully, and then select those that have their heads thrust into the cells, drinking honey. Unless we are very rough, and use too much smoke, the old bees will not do this; neither will the very young bees. Fortunately, this is an easy way to determine which are the bees of the best age; and, fortunately, too, such bees are in the correct position for being picked up very easily.

BEES AND HORTICULTURE.

One of the good things for which we have to thank Eugene Secor, the efficient manager of the National Bee-Keepers' Association, is the getting out of a pamphlet entitled "Bees and Horticulture: Their Relations Mutual." The sub-head describes the pamphlet in a few words. It reads as follows: "The purposes of this pamphlet is to put into condensed form, for the use of bee-keepers and fruit growers, such information as is at hand, derived from experience and recent investigations, relating to the economy of nature in plant and insect life, and to show their mutual independence." This little pamphlet is furnished free upon application. If you have a neighbor fruit grower who is opposed to your keeping bees, or one who persists in spraying his trees while in full bloom, to his own detriment and yours, see to it that a copy of this little pamphlet is placed in his hands.

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RELEASING QUEENS AT NIGHT.

Mr. S. A. Dyke, of Waldo, W. Va., writes me of the excellent success that he has had in releasing queens at night, when trying to introduce them. He has a cage so arranged that when the slide is withdrawn the opening to the cage is still covered with paper that is saturated with honey. The slide is withdrawn at sundown. By the time that the slip of paper is eaten out it is night, and all is quiet. One advantage of releasing a queen in this way, instead of watching her as she leaves the cage, is that there is no danger of her flying away. I once liberated ten queens just at dusk, when it was so dark that a lamp was needed. They had been kept away from the bees and allowed no food for half an hour. This was according to some instructions given by some foreigner-I think it was Mr. Simmins. The whole ten queens were accepted—perhaps they might have been anyway. Whether releasing them at night had anything to do with their acceptance is hard to say. Leaving them without food for half an hour makes them hungry, and they are in a mood to accept any food that is offered them by the workers, which is one factor in their favor.

THE HAKES-HEDDON ADULTERA-TION CASE.

Last winter Mr. M. G. Hakes of Jackson, Mich., was fined \$25,00 for selling adulterated honey. The honey was bought of Mr. James Heddon of Dowagiac, Mich. Mr. Hakes asserts that he did not know that it was adulterated. Mr. Hakes also bought some honey of me that I had purchased of the A. I. Root Co. After he

had placed it on the market, Mr. W. D. Soper bought a bottle and had it analyzed, and that, too, was pronounced adulterated. I am satisfied that it was pure honey when it left my hands. I might add, however, that the Roots have been investigating, and E. R. Root writes me that there is lack of proof that this particular sample came from Hakes. National Bee-Keepers' Association sent its Secretary, Dr. A. B. Mason, to attend the trial, and he has made a report to the General Manager. This report gives quite a little testimony that goes to show that Mr. Heddon has been mixing. This is not the first time that Mr. Heddon has been accused of adulteration, and, in justice to ourselves, and to him, I think that suit ought to be brought against him. he is innocent he ought to be given an opportunity, in a court of law, to clear himself of these accusations. If he has done wrong, it should be proved against him, and he should pay the penalty.

PHOTOGRAPHS WANTED.

For the last three months I have been offering prizes for the best articles, result is that I have a large number of most excellent articles. Until I can make room for these there is no use in offering prizes for more. When I have used the best of those that I have on hand I shall again offer prizes. In the meantime, I should like some good photographs to use as frontispieces in the Review, The frontispiece for June is already printed, but later months are not provided for, and to the one who will send me a photograph that I think well enough of to use as a frontispiece in the July Review I will send \$5.00 cash. To the sender of any other photograph that I think well enough of to use in some other part of the Review I will send the Review for one year and one of the Superior Stock queens. If you have a neat, picturesque apiary, send me a photograph of it. Send me a photograph of anything pertaining to bee culture that

will make a neat picture, or convey some useful information. I received a picture a day or two ago taken in the depths of a maple forest, at a time when there were no leaves on the trees, and away up in the top of a tall maple could be seen a decoy bee-hive. The writer told all how he arranged the decoy hives, and put them in place, and got them down when occupied, and what a lot of swarms he had caught in this way. The picture and description will be given in the June Review. I mention this simply to show what kind of pictures would be desirable. Some little nook, some peculiar arrangement of your hives, some new style of hive, some swarm catcher-well, anything that is interesting, picturesque, or imparts useful information; all of course, relating to bee-culture. Get an 8 x 10 picture if you can; if not, then as large as possible; as the larger the picture the better the cut that can be made from it. Have your photographer use a small diaphragm in order that there may be good definition; as much of this is lost in the reproduction.

PRODUCING COMB AND EXTRACTED HONEY WITHOUT ANY SWARMING.

Mr. B. F. Blakely, Jr., of Neely, Kans., writes me how he manages in producing both comb and extracted honey, and at the same time avoids swarming. When the hive is full of bees, honey and brood, and the honey flow begins, he removes all of the brood combs except about four that contain the greatest amount of brood. These are alternated with frames containing strips of foundation for starters, and the super put on the hive. No bees are taken from the hive, they being shaken off the combs that are removed. ony treated in this way works and acts very much like a swarm. The removed combs are given to the colonies that are worked for extracted honey, these colonies sometimes being piled up four stories high. In short, this is a peculiar system of division, if such it may be

called, in which the comb honey colonies are robbed of so much of their brood, at exactly the right time, that swarming is prevented; while the brood is placed in colonies so worked for extracted honey that they do not swarm. It is a peculiar system, and one that requires the production of both comb and extracted honey.

DISTANCE THAT BEES FLY FOR NECTAR.

Mr. J. E. Crane writes are that he was much interested in the article by Mr. Ira Barber that appeared in the Review a few months ago, and told how far he had known bees to fly in gathering nectar.

Mr. Crane says that it reminds him of a conversation that he had 25 years ago with Mr. Harbison of California; who was at that time the most extensive beekeeper in the world. Mr. Harbison had moved a portion of his bees to the southern part of the State, and expected to soon move the rest of them. He was out prospecting for another location and, when some fifteen miles from his vard of bees, was surprised to find bees at work upon the flowers. He finally decided that they must be wild bees; but, as he moved towards his apiary, the bees increased in numbers. At ten miles from the apiary he found the bees more abund-Not only this, but the line of flight was in the direction of his apiary, and he was forced to the conclusion that the bees were from his own yard. Mr. Crane thinks that fifteen miles is a long ways for a bee to fly—so is eight or ten miles. He thinks it would be interesting to know if Mr. Burber's bees did not wear out rapidly when flying so far. Mr. Crane also suggests that possibly bees might fly a long distance after nectar, and not wear out so very rapidly if they found it abundant after reaching the pasture. He thinks that wandering about from flower to flower in a search for nectar might be quite wearing. He is of the opinion that they fly more miles to a trip when honey is scarce, although they may not go so many miles from home.

EXTRACTED.

STARTING BEES IN THE SECTIONS.

Bait-Sections Versus Pfenty of Drawn Combs

in the Supers.

Many bee-keepers seem to think that the use of a bait-section, or one drawn comb, in the super is exactly as $g \gg 1$ as the giving of a full super of drawn combs. There are reasons why it is not, and Mr. F. L. Thompson gives these reasons in the following article that I copy from the Progressive Bee-Keeper.

Dr. Miller does not see why a bait section would not be as good as a super of shallow extracting-frames, to get the bees to work above. He seems to think there is but one consideration, that of having bees upstairs; and if they once do that, little or much, that is all there is to it. But by having opportunity for considerable honey to be stored immediately upstairs, the queen will not be impeded in her work below, and the result will be more brood below than if that same first honey was all stored below except what little could be put in the bait comb. The effect, therefore, is right in line with the plan of forcing the bees up by taking care to have full brood-combs below when the first honey comes; and it is right in line with the universal experience that the bees put less honey in the brood-chamber when run for extracted honey than when run for comb honey. With a bait comb, on the other hand, even if the bees do work right along in the super after starting on the bait, several days will clapse while more or less honey is being stored in the brood-chamber, because there are not drawn cells, or the cells are not drawn enough, to hold it above; and it will stay there, and there will be that much less honey upstairs. I tried this plan of starting the comb honey hives with supers of shallow extracting frames several years ago, the last year I had bees of my own near Denver before they evaporated (the only reason I have not tried it since and it was easy to see there was more honey unstairs consquently less downstairs the first few days, as well as subsequently, than in the colouies with a single bait comb apiece.

But in this locality I don't see any particular necessity for extracting those combs. If one does not wish to raise both comb and extracted honey, why, let him not extract. Nothing will be lost, After tiering with a section super, which in strong colonies should not be very long after the bees are well at work in the shallow combs, and after the drawing out of the foundation of the sections is well under way, the super of shallow combs may be removed before they are all capped, and stored away until about the 1st of September, then used to catch those tedious driblets that come at the close of the season. (No danger of that unsealed honey deteriorating in this climate.) Then they will be just right for putting on next season about the middle of May, and relieve one of a great deal of work and anxiety (for there is no fruit bloom honey to speak of) on the short-storage question. The supers for those combs need not be factory-made, so long as chinks are avoided.

QUEEN BUYERS.

How They Sometimes Misjudge the Breeders.

Bee keepers who are accustomed to seeing queens in their own apiary are quite likely to be disappointed when they begin buying queens and having them come by mail. A queen sent by mail is quite likely to be small and insignificant looking as compared with a queen that is laying in a full colony. Not only is the s'rippe l-queen smiller, but there is a dinginess about her that is in striking contrast with the bright, fresh colors of the queen at home on the combs. Time and again has some purchaser who failed to introduce the queen sent him, written and said "I am satisfied the queen you sent me was nothing but a virgin." It is such things as these that stir up that veteran breeder, Henry Alley, to write as follows to the American Bee Journal:-

Once in awhile some bee-keeper who has purchased a queen and has had bad luck in introducing her, and bad luck in other ways, feels like giving vent to his disappointment, and so he sits down and writes to some of the bee-papers and gives

the queen-dealer a "blowing up." The purchaser is disappointed in several ways: He expected a large, golden-yellow queen, and, above all, had no idea that his queen would not be accepted by the bees, as he had adopted a method for introducing that some prominent bee-keeper had recommended, and there could be no doubt about the success of the undertaking!

But the queen was received; she was small, dark-colored, and the accompanying bees "were just like hybrids." About the loss in introducing the queen 1 will say but little. But does a purchaser expect to get a queen bee whose condition shall be as good when received as when the queen was put into the cage? Just consider for a moment what a hard time those bees have had while they were cooped up in the little box, and being rushed about for a week or more in a mail-bag while the temperature is nearly up to 100 degrees in the shade. Is it not a wonder that the bees are alive? Just think of a mail-bag being grabbed from a crane while an express train is traveling 50 miles an hour! Then, again, how does it affect the bees when a mail-pouch is kicked out the door of a car and the train going at the rate of 40 or more miles an hour? Sometimes the pouch is left at a station in the hot sun while the temperature is 115 degrees in the clear sunshine; and, sometimes, too, the mailpouch is placed upon the top of an old stage coach, and is carried for miles into some back town, and all the while Old Sol is doing his best to cook the contents of the pouch.

Well now, all these things are done all through the warm season. Some of the people who handle the mail in the cars have lots of fun with the bees they find in the bags, and many queens meet injury

and death in that way.

But these things are overlooked by the purchasers of queens, and they accuse the dealer of sending them inferior queens. Does any one for a moment suppose a queen-dealer would put out and knowingly mail an inferior queen? I do not believe it. The reputation of the dealer is at stake. Every queen-dealer is trying to send out queens that will be superior to those sent out by his competitor.

"Handsome is that handsome does." Well, now, queens when in the nuclei of the queen-breeder do look and appear beautiful; in fact, they are beautiful, and give promise—so far as one can judge of appearances and all indications that the queen-breeder must judge quality by—of

being superior. I always like to have people come to my yard and select their queens. Then the queens can be seen in all their glory. Of course, all who desire to purchase queens can not avail themselves of this suggestion.

Bee-keepers must not be too hasty to accuse the queen-breeder of wrong doing. Be a little charitable, and treat them as you would like to be treated under the same circumstances. Every advertiser of queens stands ready to make good his guarantee, and there is no need of fault-finding until the dealer refuses to do so.

Now a word about rearing queens. I have seen good advice given in the various bee-papers in regard to the proper methods for rearing queens. The latest advice and suggestions came from a man who has reared but a few queens. All the things this man has advised and suggested have been practiced nearly 37 years. They are known to all breeders of queens. They are "up" on all points. Yet they do send out some queens that prove on test to be inferior. They do not knowingly do this thing. The queens, when taken from nuclei, seem all right in all respects. No one is trying to see how poor queens he can rear, but how good. The breeders make every effort to please all. Every precaution is taken to guard again injury or loss of queens in the mails What more can be done? A good many queens are injured in the mail; but more are ruined by the methods used in introducing them to full

There is one more point that queenbuyers would do well to heed, and that is not to remove the old queen until the new one is at hand. In the heighth of the season a great many breeders can and do send queens by return mail, but it is not always possible to do this. Even when a breeder has replied to an inquiry and said that he has lots of queens on hand, and can fill orders by return mail, he is not always able to do so when the order is received. A flood of orders received after the inquiry was answered may have taken every laving queen in the yard. I have waited anxiously for orders, receiving only one or two small orders in two weeks, and then had one mail bring or lers for sixty-seven queens. It is this fluctuation in the receipt of orders that upsets this "by return mail" business.

Again, supposing the order is filled by return mail, the queen may be dead when she is received. Wait until you have the new queen safely in hand before removing the old queen.

A NOVEL OUTEN EXCLUDER.

One that Requires Only a Little Metal, and

May be Used in Connection With

a Bee-Escape.

The most of our queen excluding honeyboards are full sheets of metal, or else consist of strips of metal between strips of wood. There is a great deal of talk about the necessity of free communication between the brood-nest and super. It is possible that the bees will begin work sooner with openings directly over the brood, but in the warm weather, during the rush of the honey-harvest, I think it makes little difference. How many times some of us supposed that we had the bees shut out of some part of the hive, only to discover, later, that they had found a little crack, and entered the shut-off part and filled it with honey. Mr. Heddon used to assert that one row of openings in a queen-excluding honeyboard was sufficient. The American Bee Journal has a correspondent calling himself "Old Grimes," who holds somewhat similar views, and has worked them out into practical shape, making a honeyboard that can be queen-discouraging, or queen-excluding, or used as an escapeboard. Here is what he has to say of the queen-excluding honey-board:

This very convenient implement for the bee-keeper has received its due share of praise and blame, and of course with those who praise it the excluder has come to stay. Perforated metal, when first introduced, was chiefly recommended for entrance-guards, and the Alley drone-trap was constructed chiefly of this metal. When first introduced a large number of the latter were sold, from the fact that they were a new thing, and something of a novelty, but we guarantee that not one in ten of those purchased is in use, and

the most of them will be found in the pile of "has beens," and it is so to a considerable extent with the entrance-guards.

In the Grimes apiaries we use queen-excluding honey-boards, but use a small amount of perforated metal; it is economy to use less material, and not obstructive to the bees. As ordinarily used the perforated metal is placed upon the hive in sheets, or it is made into a wood-slatted honey-board, and there is no way for the bees to pass except through the perforation.

As previously stated, we use a 10-frame hive, and we make a frame for our honeyboard just as though we were going to use the slats and strip of zinc, but instead we insert a thin board the whole size of the top of the hive excepting a threeeighth inch space on each side. This space allows the bees free communication from brood-chamber to super, but it is along the outside of the outside combs. The queen scarcely ever visits the outside of the last comb in a 10-frame hive, and the charces for her to get above through the openings are small-in fact, we have had small queens get above even when perforated metal was used.

In the box-hive days the bees would work quite as well in the supers, and have access through only two or three auger-holes, and in recent days some have recommended honey-boards with only one row of perforated metal. Now, why have any perforations if the bees work as well, or even better, and the queen stays where we want her?

There are times, though, when we desire the metal, and a good share of our boards are prepared with a simple device whereby a perforated strip of metal can be attached over the spaces. This is used when we desire to rear a queen in the upper portion of the hive, and is not intended to prevent the old queen from coming up, but to prevent the young queen from getting down. We also use the metal upon our excluder when we first hive a new swarm and wish to keep the queen from getting into the sections, but in this case the use is only temporary, or until the brood-nest is established in the proper place, and then it is

When working for extracted honey the excluder is used for a considerable period, for it enables the bec-keeper to secure combs solidly filled with honey, instead of half honey and half brood. In an ordinary season all of this brood in the super would become mature too late to gather honey, and they become consumers, as

they have already been in the larval state. With a close watch of the honey-resources of a given locality, much honey can be saved that would otherwise be uselessly consumed.

There are other times when the queen excluder can be used to advantage. During a short honey season it is well to restrict the number of bees, and to keep the colonies weak instead of strong—it means less feeding.

In the Grimes apiaries we use the Porter bee-escape, and a few of our honey-boards are fitted with them. Strips of tin are placed over the two open spaces, cutting off all communication except through the escape. We use this device for the removal of the most of our combinoist.

We use the bee-escape only to a limited extent upon our extracting supers—it is hardly quick enough in operation for our work. Our honey extracts better when taken directly from the bees. When the escape is used several hours must elapse before the supers can be removed, and if the escapes are put upon the hives in the evening, the honey is quite cool by the time we extract, and does not flow so freely from the combs; and, on the whole, the boys prefer the brushing and shaking process. With our shallow supers the bees are soon removed, and sometimes the brushing is not resorted to.

We expect that further developments will enlarge the usefulness of both the queen-excluder and the bee-escape.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted

freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

CHICAGO, II.L.—We quote as follows: Fancy white, 15 to 16; No. 1 white, 15 to 14; fancy amber, 12; No. 1 amber, 10 to 11; fancy dark, 9; No. 1 dark, 8; white, extracted, 7½ to 8; amber, 7 to 7½; dark, 6½ to 7; beeswax, 28.

R. A. BURNETT & Co., Mar. 14. 163 So. Water St., Chicago, Ill.

NEW YORK.—We quote as follows: Fancy white, 15; No. 1 white 13 to 14; fancy amber, 12; No. 1 amber, 11 to 12; fancy dark, 11; No. 1 dark, 10; white, extracted, 8 to 8½; amber, 7 to 7½; dark, 6 to 6½; beeswax, 27 to 28.

Mar. 15. HILDRETH & SEGELKEN, 120 West Broadway, New York.

BUFFALO, N. Y.—For four to six weeks there has been an excellent trade in all grades as quoted. We urge the marketing of all now, as berries will soon be plentinl and cheap. We quote as follows: Fancy white, 16 to 17; No. 1 white, 14 to 15; lancy amber, 14 to 15; No. 1 amber, 12 to 13; No. 2 dark, 10 to 12.

BATTERSON & CO. May 4. 167 & 169 Scott St., Buffalo, N. Y.

CHICAGO, III.—Demand for comb honey is limited. Sales can be made for fancy white at 15 cents. Other grades in proportion, as low as to for dark. Extracted is i. Innited supply and good demand. White, 8 to 9; amber, 7 to 8, depending upon package and flavor. Beeswax, 25.

S. T. FISH & CO., May 4. 189 So. Water St., Chicago, Ills.

KANSAS CVTY.—Receipts and supply light; demand fair at the following quotations: No. 1, white, 14 to 15; fancy amber, 13 to 14; No. 1 amber, 12¹/₂ to 13; white extracted, 8; amber, 7; dark, 6; beeswax, 25.

C. C. CLEMONS CO., May 4. 423 Walnut St., Kansas City, Mo.

NEW YORK, N. Y.—There is a steady demand for all grades of comb honey. The receipts are not heavy. We quote as follows: Fancy white, 15 to 16; No. 1 white, 13½ to 13½ amber, 11 to 12; buckwheat, 9 to 11. Extracted honey is steady at the following prices: California white, 8½ to 9; light amber, 8 to 8½; white clover, 8½ amber, 7½ to 7 cts, for kegs, and 7 to 7½ for tins, according to quality, but with very little trade. Florida extracted honey, 8 to 8½, light amber, 7½ to 8; amber, 7 to 7½. Other grades of Southern at from 55 to 86 cts, per gallon, according to quality. Beeswax, a little more active at from 27 to 28 per lb.

Jan. 11. FRANCIS H. LEGGETT & CO. W. Broadway, Franklin & Varick Sts

15 cts. pays for year's subscription to Poultry Bee and Fruit Journal, Davenport, Iowa, if ordered at once. Regular price, 35 cts.

SHALL WE ADOPT PLAIN SECTIONS AND FENCES?

Perhaps you are debating this question now. It is not too late yet to make a trial of these goods this season; and no doubt you would like to know what has been the experience of other bee-keepers who have tried them. We have on hand some

EVIDENCE.

If you wish we will gladly send you a copy. You will find much interesting reading, and it may be worth dollars to you. See what bee-keepers all over the United States and Canada have to say. Ask for Bulletin A. Do not delay, but send your request at once.

Do you want an EXTRACTOR this season? Investigate our

Cowan Reversible, Ball-Bearing Extractors.

We have a little pamphlet giving some information about these. Send for it if interested.

We are pioneers in the manufacture of modern fixtures for Plain Sections and Fences, as well as all other supplies. If you want them right, send to us or our branch officies and agencies.

The A. I. ROOT CO., Medina, Ohio.

Please mention the Review when you write. Watch for our advertisement in next issue.



There's a Difference



between rearing queens for quantity and quality. am trying my best to rear the best queens possible. My breeding queen is one of the best Doolittle ever reared. He writes "Can you let me have queens from the one you got of me last year?" During the season when conditions are most favorable, I rear a large number of queens, selecting the very best cells and virgins. The very best of these are used to requeen the poorer ones in my own yard, and for select and breeding queens My untested queens are given the best attention, and reared under the best possible condition, and from the best of mothers. Some of the best cells that are sealed when the best colonies swarm are used. All queens are WARRANTED to be good ones.

Prices: Untested, 60 ets.; one doz., \$6.00; select, single queen, 85 ets.; six for \$4.50; tested, \$1.00; six for \$5.00. Selected, tested, \$1.50. Breeders, \$2.50; the very best, \$4.00. Write for circular.

Harry Lathrop writes: "I have bought queens from different breeders, and never got any that were better than those I got of you."

My bees are the Golden or Five-Banded Italians, and they give me more honey than any other bees I have tried.

J. B. CASE, Port Orange, Florida.

Golden Italians.

For several years past I have tested the various strains and races of bees by obtaining the best queens that money would buy, from all of the leading breeders of the U.S., as well as Europe, and, after careful tests, have found the greatest excellence among certain strains of our American or Golden Italians. By careful selection from these for years, with the ideal characteristics always in view. I have developed my present strain. Among these characteristics are industry, yigor, hardiness, gentleness, superior comb building, disinclination to swarm, beauty, size, etc. The fact that I have constant offers to exchange breeding queens with the foremost queen breeding specialists, at well as receive complimentary remarks from some of our leading professional bee-keepers, proves that my strain pleases them. My bees possess the above traits which go to make up real worth, while for color and beauty they are equal to any strain I have ever seen. All queens are fully warranted, both as to purity of stock and general value, within reasonable limitations. Should any prove otherwise, they will be promptly replaced gratis. This is a rule I have always followed, and I do not know of a single dissatisfied customer. If you want cheap queens, better order them elsewhere; but if you want the best, I shall be pleased to fill your order at the following prices :-

Before July 1st, one warranted or tested queen, \$1.00; six for \$5.50; twelve for \$(0.0); one select tested, \$2.50; one special breeding queen, \$5.00. After July 1st, one warranted or tested queen, 75 cts.; six for \$1.00; twelve for \$7.50; one select tested, \$2.00; one special breeding queen, \$4.00.

Farm Seeds.

In addition to the above, I grow and handle a few choice specialties in farm seeds; viz., Siberian Millet, a new variety superior to and different from all others. Seed, extra recleaned, per bushel, (cnough for 3 acres \$1.00. German Millet, the old standard variety, seed recleaned, So cents a bushel. Amber Cane, pure, for planting, quart, by mail, 30 cents, per bushel, \$1.00. Pedrick Perfect Golden Beauty Corn Burpee's strain, a fine, large, yellow variety, per bushel \$1.00. Sacks 2 bushel | in which to ship the above, 15 cts. each, extra.

J. W. KUHN, Belleville, Kansas.

BACK NUMBERS FREE!

Back numbers of the Review are different from those of newspapers and some journals. The information that they contain is just as valuable now as when first published. Each issue of the Review, especially if devoted to the discussion of some special topic, as is the case with all of the copies printed during the first five or six years of its existence, is really a little pamphlet containing the best thoughts and experience of the best men upon the topic under discussion. Some issues are now out of print; of others only a few remain; while of others there is still a good stock on hand. Insteau of letting these back numbers lie on my shelves, gathering dust year after year. I think it better to use them in getting new subscribers, and inducing old ones to renew, and, at the same time, have them out doing good. I shall, therefore, as long as these back numbers hold out, send 12 of them free to each one who sends me one dollar for the Review for 1900. and who says that he cares for them. This offer includes renewals as well as new subscribers. The selection of these back numbers must be left with me, but I will see to it that no two are alike; and to old subscribers I will try and send such issues as they do not already possess. Before this offer is open to old subscribers, all arrearages must be paid up.

W. Z. HUTCHINSON, Flint, Mich.

};};};};};};};



Lone Star Apiary

Of G. F. Davidson & Son, Fairview, Texas, can offer to queen buyers the following reasons for patronage: Mr. Davidson has had 15 years of experience with bees, 10 of them being devoted to queen rearing; he each year imports queens from the best breeders in Italy, which gives him the best of *Imported Stock*; he has 400 full colonies, and about the same number of nuclei, which enables him to fill orders promptly, and there is no foul brood or other bee disease in his locality. The cells are built in full colonies having laying queens, as nearly under the swarming impulse as possible; and as great care is taken in securing healthy, vigorous drones, and promoting the pure fertilization of queens, as in the rearing of the queens themselves.

Prices are as Follows:

One untested queen in June, 75 cts.; six for \$4.25 twelve for \$8.00. Tested queens \$1.50 each; six for \$8.00; twelve for \$15.00. After July 1st., untested queen, 60 cts.; six for \$3.25; twelve for \$6.00. Tested queen, \$1.00; six for \$5.50; twelve for \$6.00. Side arrival guaranteed.

Agents for Higginsville bee-keepers' supplies.



numbers, and 1,000

Has Arrived

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking. 3-99-tf

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

Carniolans! Carniolans!!

The largest and finest stock in America. No other apiaty in this country contains as many Imported Carniolan Queens as this. The gentlest, the hardiest, gather the least propolis; no bee-veil needed; equal Italians for honey

RALPH BENTON, "The Carniolan Apiaries," 1801 Harewood Ave., Washington, D. C. 3,00,3t

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.

Bees for Sale.

Owing to poor health, I offer for sale all of my bees (90 colonies), together with 200 half stories, 200 new hives, and 75,000 of the G. B. Lewis Co.'s snow-white sections. All will be sold at a very

low price.
I also offer eggs for hatching from B. P. Rocks,
I also offer eggs for hatching from B. P. Rocks,
Black Minorcas and White Leghorns - all high-scoring birds. All eggs warranted to hatch. If

they don't, more will be sent free.

N. H. SMITH, Tilbury, Ont., Canada,

Hives Almost Given Away!

Below is a list of hives that I have taken in exchange for sections, foundation, etc., and I wish to sell them. I will take \$30.00 for the lot. Supers. covers, bottom - boards, entrance - blocks, pers. covers, bottom - boards, entrance - blocks, etc., are included, but there are no frames. I will, however, furnish new frames, all nailed up, for \$5,50 extra. The hives will hold nine Langtroth combs, and they are painted two coats of paint in different colors. Here is the list;—

6, new, Champion, chaff-hives, at \$1.35 ... \$8.10
14, secondhand " " " 1.00 ... 14.00
11, " Simplicity hives " ... 7.02 Simplicity hives " 11, 7.92 Total, ...

I also have 4,000 of Root's No. 1, $4^{1}_{4}x_{4}^{1/2}x_{4}^{1/2}s_{5}$ sections that I offer at \$2.65 per 1,000. Who wants them? Speak quick.

CHAS. C. CHAMBERLIN, Romeo, Mich.

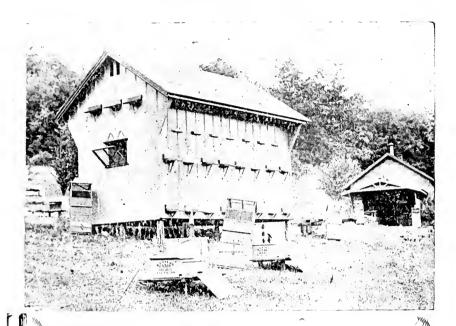
A New Departure.

A new and most liberal offer is being made by the publishers of Good Health in the form of a "Family Box" containing useful household arti cles which they are offering as a premium for one new subscription to their magazine at the regular subscription price of one dollar. Our attention has been called to this exceptional offer, and feeling that many of our friends would be glad to avail themselves of this opportunity. ne gian to avail themselves of this opportunity, we give the contents of this Family Box, as follows: "1 pkg Pearline; 1 bar Fairy Soap; 1 pkg. Allen's Foot-Ease; 1 large box Talcum Powder; Omaker Oats; 1/5 b. Protose; 1/5 b. Nut Butter; 1 pkg. Granose Biscuit; 1/4 b. Fig Bromose; 1 pkg. pkg. Grantose Biscuit; 4, lb. Fig Bromose; 1 pkg. Grantola; 1 can Protose and Beans; 1 lb. Caramel Cereal, and 1 copy Healthful and Artistic Dress System Pamphlet illustrated."

The actual value of this box figures up at about \$1.50; so, besides securing a year's subscription to "Good Health" a saving of 50 cents is

effected on buying household supplies. The box weighs fourteen pounds, and is sent by freight or express, carriage charges collect. It is furn shed by the Good Health Publishing Co., Battle Creek, by the Good Health Philishing Co., battle Creek, Mich, if requested, when \$1.00 is sent them direct in payment of one new subscription to that magazine. "Good Health" saves many doctors: bills, and brings to the home every month what is most needed and just what we all want to know for that particular month. Upon the mobilishers will send, you a sample want to know for that particular month. Croin request, the publishers will send you a sample copy, and will also be glad to furnish you copy of their catalogue of publications. We hope that many, if not all, of our readers will make use of exceptional opportunity and secure a

" Family Box



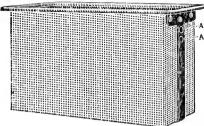
A "Superior" - Doolittle Cross.

Improvement in stock is becoming one of the foremost considerations with the progressive beekeeper. Here is what I am doing: My queens are bred from Doolittle's very best breeders, and the drones in my apiary are reared from the strain that W. Z. Hutchinson is advertising as "Superior Stock." I am ready to stake my reputation on this strain of bees—not simply upon their golden color, but upon their REAL WORTH to the honey producer. Send for circular giving fuller particulars; and with it will be sent instructions "How to Build a House-Apiary," like the one shown above.

Prices of queens are as follows: One untested queen, \$1.00; six \$5.00; twelve for \$9.00. Tested queens, \$1.50. Orders filled in rotation.

JEWELL TAYLOR, Forestville, Minn.

Money Order Office, Spring Valley



Improvement in Wax Extractors.

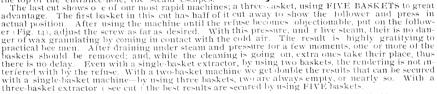
The bee-keeper who has any great amount of coalbs to render cannot depend upon the so'ar, or the small steam extractors now offered. The larger the extractor the better, the demand is always for the LARGFST SIZE; and this, to day, contains nearly 4000 cubic inches within the baskets. This, assisted by having extra baskets in reserve, makes the working space always up to its fullest capacity. By using the press and follower (see cut) we can, in a few moments, have the basket and refuse ready to be taken from the extractor; and while the basket removed is being cleaned an extra one takes its place, thus giving the operator clean haskets to con-

tinue the rendering, indefinitely. All baskets are interchangeable—as much so as the frames in our hives.

The baskets (see cut) are made in a most substantial manner, of extra leavy galvanized wire-cloth, all in one piece, united and soldered to galvinized hoop-iron at the ends. All parts in their construction are made upon the self-spacing of

principle.

The second cut is a longitudinal, sectional view showing the basket and extrator cut through the 2. Fig. 14 is the follower to be placed on 15 Fig. top of refuse, when ready to use the press. 11 is an iron bar holding the screw. Fig. 12 is the basket. To remove basket and screw we give it a few turns, when the screw leaves hole in the follower, and movement either way, towards either end of the basket (marked Fig. (5) releases one end, when the bar and screw is lifted from basket. One motion puts it in place, and the instant that pressure is applied it is fast. Figs. 2, 6, 7, is for the escape of steam and foul odors from the stove. The surplus steam entering at fig. 2, going down to fig. 6, and into the stove at fig. 7, where an open lid or ringed griddle should be used. Fig. 9 is where water is supplied to the tank when more water is needed. When the water gets below the top of the entrance-hole, the steam escapes.

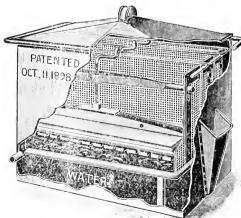


CHERRY VALLEY, N. Y., Mar. 19, 1900. Mr. C. G. Ferris,

Dear Sir : - Your letterasking for my verdict on your Wax Extractor, after using it, is before me. To withold commendation for a machine that so practically does the wor kintended, and does it more thoroughly and quicker than any such apparatus of which I have knowledge, would be a wrong not only to yoursell but to bee-keepers as well. For over thirty years I keepers as well. For over thirty years I have used live steam to render my wax, several times changing the construction of my extractor—To say that I have laid aside last machine, that had a capacity of one hundred and twenty-five pounds a day, favor of your Extractor, which I consider which I consider does the work cheaper and with less waste in slum gum than any machine I have known, is the greatest praise I can offer. The rendering of wax was never considered a neat, pet job, hence your Extractor will be a boon wherever it goes. J. E. Hetherington,

Send for descriptive circular and prices to

C. G. FERRIS, So. Columbia, N. Y.



Motto, Promptness.



Did you ever go to your post-office every day for a week expecting each mail to bring a queen, and not even get a postal informing you when she would be sent? I do not treat my customers that way; and not long since received a letter from a patron, stating that he was glad that he had found a breeder that was neither too lazy nor too stingy to write.

Every one can expect an acknowledgment of the receipt of an order as soon as the mail service will supply it, and almost invariably, the queens as soon; or according to instructions.

I advertise but little out of season because I enjoy sending queens by return mail, and usually do it.

The only reason for qualifying a promise to fill orders by return mail, a thing I have done, with few exceptions, in the past, is because they sometimes come in a rush unexpectedly. I have received orders for too queens in a single day, after having a "dull trade" for some days, and to keep cells and queens in the right condition, even with 300 nuclei, to meet these fluctuations is next to impossible. Nevertheless, remember my motto, with the assurance that none are kept in suspense, and that it is an exception to the rule if orders are not filled at the appointed time, or according to instructions. make a specialty of breeding the Golden or five-banded strain; and the result is only Goldens seem to be in demand; but I now have a select three-banded breeder, of "Superior Stock," that produces the quietest bees I ever handled, and I will supply her daughters, mated in a Golden apiary, thus giving a direct cross, and guarantee perfection in development, for \$1.00 each, for either tested or untested.

Seventy-five per cent of all Golden queens carried over, or wintered, produce apparently uniformly marked drones and Golden bees. A number of these queens are tested each year for business, and those showing the best results used as Besides this, to prevent inbreeding, I occasionally secure the best queens offered by other breeders. The result of my persistent efforts in breeding them up to a high standard, enables me to offer tested queens answering the description for that grade in the "Descriptive List" of the N. Q. B. Union, at the same price charged for untested. Prices are as follows: Tested or untested \$1.00; Select tested \$1.25: Breeders \$2.00; and faultless, \$5.00. Faultless queeus are of rare occurrance, and for such, orders should be placed early, to be filled when they The "breeders" are such as are usually sold as faultless queens.

Prices on quantities quoted on application.

Money order office Warrenton.



W. H. Pridgen, Creek, N. C.



500 Nuclei!

If there is any one thing upon which I pride myself, it is that of filling orders by return mail. In order to do this, I keep 500 nuclei! My stock is the Golden, or five-banded, Italian, of the Doolittle strain. All cells are started from

larvæ not over 21 or 36 hours old, and the cells built in full colonies. All queens are warranted purely mated; and don't forget that all orders are filled by return mail!

Single queen, as queens average, 75 cents; selected, \$1.00; tested, \$1.50; selected tested, \$2.00; extra, selected tested, the best that money can buy, \$4.00. Send for eircular.

H. G. QUIRIN, Parkertown, Ohio.



OKOKOKOKOKOKOKOKOKOKOKOKOKO

Our Advantages.

We are situated in a favorable climate (Texas), and can mail queens at all times from March to December. We have over 500 colonies of bees, and several hundred nuclei, and can have any number we wish. We are breeders of Golden Italian, threebanded Italian, and Holy Land bees and queens. We have secured our stock, regardless of cost, from the best breeders in America; and have bred by selection until we have some of the finest strains of the three best races in America. Our three queen rearing yards are several miles apart; and we take care that only drones of each race fly anywhere near that yard. Send for circular which gives valuable information on queen rearing, and tells why we are able to turn out the best queens in the world at the following

PRICES.

	one	six	twelve
Untested in June, July, Aug. and Sep.,	\$.75	\$4.25	\$8 oo
Untested, all other months,	1.00	5.00	9.00
Select untested, 25 cts. extra at all times.			
Tested in June, July, Aug. and Sep.,	1.25	6.75	12.00
Tested, all other months,	1.50	8,00	15.00
Select tested,	2 00	11,00	20 00
Best breeders of the three-banders	3.00		
Best breeder, Golden Italian or Holy Land,	5.00		
Three-frame nucleus (no queen)	3.00	17.70	34.75
Full colony, S.fr. Dovetailed hive, (no queen	1 6.00	33,00	60,00
Add the price of queen wanted to that of the nucleus or full colony.			

N. B. For every \$10.00 sent us for bees or queens we will, next—Aug. or Sep., send one select, tested queen; for \$25.00, a fine breeder will be sent.

O. P. HYDE & SON, Hutto, Texas.

DECEDIO RORO RORO RORO RORO RORO

Queens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coning season. The Laws strain of faultless, 5-banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

M. H. Hunt & Son

Sell Root's Goods at wholesale and retail, at their prices. Our inducements are Strictly First-Class Goods, Cheap Freight Rates and Prompt Shipments. Our specialty Anything you want for your Bees. Send for our Catalog. Cash or trade for beeswax.

M. H. HUNT & SON, Bell Branch, Mich.

Please mention the Review



GEO. W. COOK,

breeder of

Golden Italian Queens

and dealer in

Aparian Supples

of all kinds.

Golden Italian Queens, untested, from Dec. to July, 75 ets. each; six for \$4.50; or \$8.50 per doz. From July to Dec. 50 ets. each; six for \$2.75; or \$5.00 per doz. Tested queens, double the above prices. Breeding queens, \$3.00 and \$5.00 each

GEO. W. COOK, Spring Hill, Kans.

Please mention the Keview

MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U. S., and have testimonials from satisfied customers in the U. S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 1st, \$1.50 each. After June 1st, tested queens, either strain, \$1.00 each; untested, 75 ets. each. One-frame mucleus with queen, \$1.50; two-frame, \$2.50; three-frame, \$3.25.

1-00-tf

J. W. MINER, Ronda, N. C.

Please mention the Review

At First Cost.

Now is the time for all Eastern and Southern Bee-Keepers to send in their orders for Bee-Hives and Bee-Keepers' Supplies. We have a special offer to make to all Eastern and Southern buyers. Let us know your wants and we will take pleasure in showing you that we can really save you money over our Eastern Competitors. The reasons are two-fold. In the first place, we are located in the lumber region of Wisconsin, and get our supply of lumber direct from the mills; whereas, our Eastern competitors are buying lumber in our State and paying freight on rough lumber, which weighs much more than the finished product, to their Eastern factories, and then freighting the finished product back all over the West. In the second place, we support no branch houses or middle men. We sell direct to the consumer, and the only way a dealer can make a profit off our goods is by buying the larger quantity which is open to any purchaser, and selling at the small quantity rate. The cost of an article is based on the cost of material there we shine), the cost of labor, and a reasonable profit to the manufacturer. We sell our goods on this basis, while the manufacturer who sup-

ports branch houses all over the United States, and some in foreign lands, must add to what we would consider a tair selling price, the freight charges from his factory to his supply-house; he must have interest on his investment while his goods are waiting for a purchaser; he has rent to pay every month his branch house is kept open; he has additional insurance on the goods in branch houses; he must pay cartage from the cars to his branch house, and again back to the cars. Then the manager and clerks in the branch house must be paid. All these things tend to increase the cost of the commodity to the consumer. If prices are the same at the branch house as at the home factory then the price at the home factory must be raised to meet these constantly increasing expenses; and the beekeper who takes his supply from the home factory is helping to support the branch houses in different States.

We sell f.o. b cars at Hudson, with an allowance on freight for goods going east of Chicago. Buy your Bee Hives and supplies from us and you will get the goods at first cost.

QUEENS

Are my specialty. I have 500 colonies and can, if necessary, rnn 1,000 nuclei. I shall have two experienced apiarists in my employ. I can begin sending out queens of this year's rearing as early as March; and throughout the whole season I shall send them

By Return Mail.

My bees are Italians, from imported stock, also from Doolittle, as well as from selected home bred stock.

Prices are as follows: Untested. \$1,00; 3ix for \$5.00; twelve for \$0.00. Tested. \$1,50; six for \$8,50; ,twelve for \$15.00. Best breeder, \$4,00.

Root's Goods

At Reot's prices, plus carload rate of freight. 2-00-tf

W.O. Victor,

Hutto, Tex., April 10, 1900 T. F. Bingham,
Enclosed find \$1.75
Please send me one brass smoke engine. I have one already. It is the best smoker lever used.

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

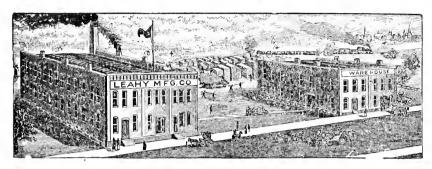
This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,
Augusta, Wisconsin

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the cud that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. GO., East St. Louis, Mo. Omaha, Nebraska.

Gontraction

Of the brood-nest can be made very profitable if practiced in the right manner, with the right kind of hives and appliances, in the right locality and in the right time of the season. reverse will prove true if mistakes are made. Your locality may be one in which contraction, if rightly managed, would put many dollars into your pocket. All of these points are fully explained in one of the chapters of Advanced Bee Besides this, the CULTURE. book contains 31 other chapters n e qually important subjects.

Price of the book, 50 cts.; the Review one year and twelve back numbers and the book for only \$1.25.

W. Z. HUTCHINSON,
Flint, Mich.

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free.

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

New W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

Page & Lyon,

Mfg. Co.

New London, Wis.

Nearness to pine and basswood forests, the possession of a saw-mill and factory fully equiped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired. Send for circular; price list,

and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

3 PARDS. RAGES.

Golden Italian, 3 - Banded Italian, and Holy Lands.

We have secured our stock from the best breeders of the U. S., and now we are able to offer the best strains of the best races in America. Queen Rearing is our specialty; we have been at it for years, and this department is under the immediate supervision of our Mr. H. H. Hyde. We want the address of every bee-keeper for our queen circular which gives prices and methods of queen rearing, honey production, prevention of swarming etc. Prices, either race:—

etc. Prices, either race:— Untested June, July, Aug. and Sept.

75 cts : 6 for \$4.25.

All other months, \$1.00; 6 for \$5.00. Tested, June, July, Aug, and Sept., \$1.25; 6 for \$6.75. All other months, \$1.50; 6 for \$8.00. Discounts for quantities. Select

tested and breeding queens a specialty.

O. P. HYDE & SON,

1-00-tf

Hutto, Texas.

This is the original one-piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK,

Watertown, Wisconsin.

Listen! Take my advice and buy your bee supplies of August Weiss: he has



tons and tons of the very finest

ROUNDATION

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered ere. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies—Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

If the

REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Violin for Sale.

I am advertising for the well-known manufacturers of musical instruments, Jno. F. Stratton & Son, of New York, and taking my pay in musical merchandse. I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradiuarus." Red, French finish, high polish, and real elbony triumings, price \$14.00. The bow is of the finest analysis trimining, precision. The new is of account of the management of the period of the per is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$2.50. This makes the entire outfit worth an even \$20.00. It is ex-actly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some in-struments here that cost several times as much. retainents here may cost several times as much. I wish to sell this on fit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days trial, and if not entirely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG. Cedar Mines. Iowa, manufacturer of and dealer in Apiarian Supplies. Send for circular. 1-96-6

Please mention the Feview.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive.

J. H. M COOK, 62 Cortland St., N. Y. City



With a view to extending the circulation of the Review, I make following special offer: For only \$3.50 I will send the Review for 1900, 12 back numbers, and 1,000 strictly first-class, one-piece sections. The Review and 2,000 sections, \$6.00; the Review and 3,000 sections, \$5.75; the Review and 5,000 sections, \$13.00.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

Carniolans!

Carniolans!!

The largest and finest stock in America. No other apiary in this country contains as many Imported Carniolan Queens as this. The gentlest, the hardiest, gather the least propolis; no bee-yeil needed; equal Italians for honey.

RALPH BENTON, "The Carniolan Apiaries," 1801 Harewood Ave., Washington, D. C. 3-00.3t

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.

GEO. W. COOK,

breeder of

^{*}Golden Italian Queens

and dealer in

Aparian Supples

of all kinds.

Golden Italian Queens, untested, from Dec. to July, 75 cts. each; six for \$4.50; or \$8.00 per doz. From July to Dec, 50 cts. each; six for \$2.75; or \$5.00 per doz. Tested queens, 3.00 and \$5.00 each.

GEO. W. COOK, Spring Hill, Kans.

MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U.S., and have testimonials from satisfied customers in the U.S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 1st, § 50 each. After June 1st, tested queens, either strain, \$1.00 each; untested, 75 cts. each. One-frame micleus with queen, \$1.50; two-frame, \$2.50; three-frame, \$3.25.

4-00-tf

J. W. MINER, Ronda, N. C.

H. G. QUIRIN, THE OUEEN BREEDER,

is, as usual, again on hand with his IM-PROVED strain of

GOLDEN ITALIAN OUEENS.

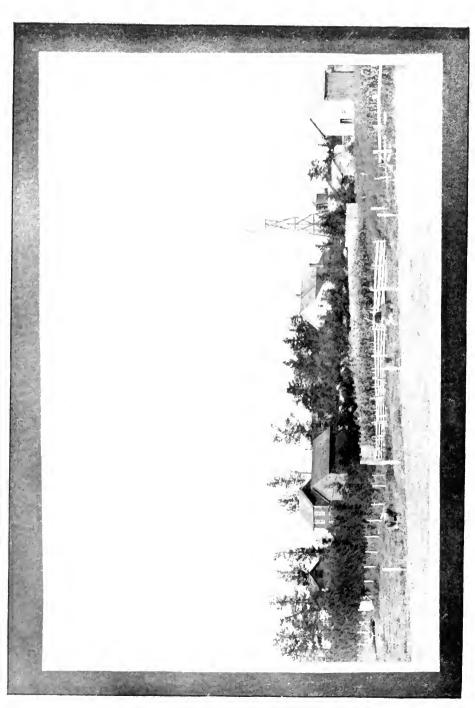
Our largest orders come from old customers, which proves that our queens give satisfaction. There is no bee disease in our locality. We have had twelve years' experience in rearing queens. One thing we pride ourselves in, and that is in sending all queens promptly by return mail, and we guarantee safe arrival. Price of queens will be as follows:

Warranted, - - - - 50.50 \$2.75 \$5.00 \$ Selected, warranted, - - 75 \$4.00 7.00 \$ Selected tested, - - - - 1.00 5.00 \$9.00 \$ Extra selected tested, the best that money can buy, 3.00

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HOME OF E. FRANCE & SON-AS SEEN FROM THE REAR.

The Bee-Keepers' Review

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

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NO. 6.



PERFECT SYSTEM FOR MANAGING OUT-APIAR-IES IN THE PRODUCTION OF ENTRACTED HONEY.

BY N. E. FRANCE.

Each beekeeper should study the various ways of others, and then apply such methods as will best suit his location and



circumstances. With us, bees wintered in the cellar would often be weaker in numbers the last of April and May than when taken out of the cellar, while those wintered in large chaff hives on the sum-

mer stands would be strong and by far the more profitable. So that, for the last twenty years, our bees have been mostly in these chaff hives, which are simply four standard Langstroth hives inside, combined into one hive or house, with a 2-inch space on outerside for chaff filling. Each colony is separate from the others, one entrance on a side, but in winter weather the bees cluster near the center of the hive, and thus help to keep each

other warm. See the picture of an empty hive on next page; showing broodframes in hive-body; button over upper entrance turned to one side as in summer; second story by side of hive; top and side next to stack showing chaff wall with a strip of tin on two upper sides of upper stories of hive to prevent any chance for bees to pass from one colony to another. When two sets of extracting combs are to be used, the cover is raised in place by use of the board band, which is hooked together and set on the hive proper. One-half of this band is laid on the grass with the queen-excluding zine leaning against the hive by it. hinged cover is turned back one way while working two colonies, and reversed when working the others-so there is no need of lifting any covers. A plain band made of common fencing forms the stand for the hive, and is leveled before the hive is put on it.

If the bees have plenty of good honey and a young fertile queen early in the fall, we seldom have any loss. On an average, not over three to five per cent. I do not recommend this hive, nor advise those having single hives, and who can winter bees successfully in the cellar, to change to our method or kind of hive. The bees consume a little more food in

chaff hives, than in a cellar, so, if you can, keep the cellar dry, well ventilated, of uniform temperature, about 45°, with strong colonies and good feed, and don't be in too great a hurry to get the bees out in the spring.

and putting empty combs above. If a colony has a good queen, but the colony itself is not as good as desired, I take from the strongest colonies one or two brood-combs covered with bees, and give them to the weaker.



THE FRANCE, QUADRUPLE, CHAFF HIVE.

In warm weather in the spring I examine each colony, and see if they need any feed or help; and, if so, give them, next to the brood, a comb of honey that I may find in some queenless colony that has lost its queen during the winter; or, perhaps, exchange an empty comb for a comb of honey from some colony that can spare it. When dandelion bloom appears, I again examine each colony, clipping the queen's wings, putting the brood from the second story down below,

When there is nothing for the bees to gather in the spring, we use a hive-tent; for by its use we can work in the apiary all day and not have any colony of bees disturbed by robber bees. Our tent is made of a light frame, and covered with cheese cloth, with an outlet at the top to let out bees that may alight on the insides while we are at work. If I were to make a tent in which to work single-colony hives, I would use three light frames covered with wire cloth, and

hinged together, so it could be folded and easily stored away when not in use.

From the best colony in the apiary I select choice worker combs full of eggs to raise my queens for that apiary; buying new queens, one or two each year, to introduce new blood. As my bees are mostly in out-apiaries, from three to five miles from home, and no one there to look after them when we are away, I do not allow natural swarming; but divide as occasion requires.

When white clover begins to yield honey we extract all the store-combs to gathered. No honey is allowed to be extracted until fully ripened; and, generally, all capped over. If unripened honey is put on the market it will soon spoil and ruin the market. Good, ripened honey, if kept in a dry room, will keep for years. I have some good honey in common glass jars that I extracted twenty-two years ago, and it promises to remain good so long as not sampled too often.

Towards the close of the honey-flow we make sure to save enough good combs of honey to feed the bees until dandelion



A COZY CORNER IN THE HOME-APIARY OF E. FRANCE & SON.

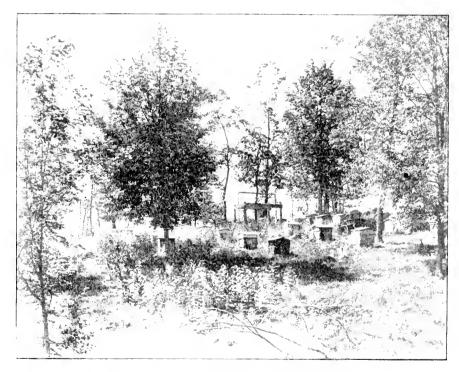
get out this amber grade from fruit bloom and dandelions; as its color and flavor should not be mixed with the better grades. Great care is taken to keep each grade separate, and to see that each package is marked, showing the weights and the source from which the honey was bloom next season. I am often asked "how much honey is necessary to winter a colony of bees." My reply is "A little to much feed in the fall will be just enough next spring." Wisconsin beekeepers lost 70 per o nt. of their bees last winter, not all for want of honey, but in

many places in the State, in May, I found dead or weak colonies without honey.

When our honey season is over, the extra combs, after being cleaned up by the bees, are stored in racks in the bee-house, the hive entrance nearly closed up by the large button, and the little space over the bees, under the roof, filled with dry oat chaff or straw. This is all the work we do to fit our bees for winter.

Allow me to describe some of the methods of handling the six or seven hired, inexperienced boys from 15 to 20

bee veil to take care of and return at close of the season. As we near an outapiary, each man gets his tronsers adjusted bee-tight at the ankles, and veil on his hat ready for business. Each apiary is located on a gentle slope to the south, with a heavy, timber wind-break on the north and west, and a private road from the upper side of the apiary, through the yard by the side of the extracting house that is in center of yard. This road leads on down the slope below the apiary so that the wagons, when loaded, can be run by hand easily to a



AN OUT-APIARY BELONGING TO E. FRANCE & SON.

years of age. I board them for the days they help me, about four weeks, and pay from \$12 to \$20 per month. Each one, by number, has duties assigned and will take special interest in his work, and soon become an expert in his department. Each is furnished a good straw hat and

safe distance in the grove to hitch on the teams. There is a freight wagon for barrels, uncapping-box, etc., and a canopy top four-seated rig much like a stage. Having but one team, I hire a team for a few days to haul one of my wagons. We generally arrive at an out

apiary about \$130 a.m., three to five miles from home. Each man is ready for duty, and they soon change the scene in the apiary. All are a jolly set; and if one should get a sting, he is quiet about it, for fear the other boys may laugh at him. I will call them by number to be better understood.

Nos. 1 and 2 each have a team to care for and drive; so, on arrival near the apiary, they unhitch and put the teams in the farm-barn near by; then bring to the apiary the extractor that was stored in some dry farm-building.

No. 3, being the smallest boy, brings two pails of spring water, one for drinking and the other for wash-water. No. 1 leads the wagons into the apiary by the side of the bee-house; then puts the barrels, etc., in place in the house. 5 lights the smokers, gets fuel in the open box near the house, and each set of tools in place, ready. No. 6 puts the cloth roof and siding on the house, and, with a couple of nails, fastens the board in place with the screen-door attached with spring hinges. This bee-house has simply four corner posts seven feet above the ground. The sides of the house are each ten feet, with a foot-wide board around the top and bottom. Cheese cloth, two yards wide, and forty feet long forms the entire siding, and a heavy ducking cloth, 10 x 12, forms the gable roof, which gives plenty of shade in hot days and sheds water if caught in a shower. Small strips of leather are sewed to the edges of these cloths through which to drive the wire nails to hold them in place.

All this takes only from five to eight minutes after arrival; then No. 5, with a sharp Bingham knife, will uneap the honey combs, while No. 6 attends to the extracting straining, and filling of the barrels holding 360 pounds each. I usually take the place as No. 6; as I can better take that place and at the same time have a chance to see each hand, and give orders. No. 1, with No. 2 as assistant, and No. 3, with No. 4 as assistant, open

hives, take out honey combs, brush off what bees do not run off, by two or three strokes of a very THIN and wide brushbroom, that is made specially for the purpose, at a broom factory of select. fine stock. Nos. 2 and 4 bring these honey combs, a set at a time, to the house, and return with a set of extracted ones to fill up and close the hive. The first hive in the morning has to be closed up without upper combs, so as to have combs ready for use in others, and the last set is returned to the first worked colony. To save time, and keep out of each other's way, the honey combs are set just inside of the door of the extracting house, to the left side of the door, so that No. 5 can get the combs, uncap them over a box made for the purpose, and set them close by the side of the extractor without taking time for one or two steps. No. 6 puts the honey combs in the extractor, which is a Cowan, four-frame, reversible, with ball bearings and lever brake-in short, best extractor on the market.

The empty combs are set by the right side of the door, and without taking more than one step. The field boys, Nos. 2 and 4, get rid of their honey combs, and empty ones for exchange, by simply going to the shop door. The little time saved in these few steps may seem of little importance, but it saves me daily the cost of one more man.

Every one as busy and happy as the little pets we are working with, time passes so swiftly that it seems but an hour after our arrival when the alarm is sounded from the house—dinner.

We all quit work as soon as possible and not leave hives open. These boys are active and hearty eaters, but even this laborious task is done in order. Nos. 1 and 2 feed the team; No. 3 gets a pail of fresh spring-water; No. 4 takes the baskets of dinner to a shady spot near by; No. 5 spreads the cloth and sets the table picnic style. No. 6 cuts the loaves of bread and carves the meat. Dinner over, each has a duty in packing up and get-

ting to work. The same is true at the close of the day's work, which comes when the entire apiary of 100 to 150 colonies have been treated. On the road to and from these apiaries the boys have their sport, playing cards, or tricks on each other, or telling stories, or playing on musical instruments and singing. The light covered wagon with the boys in arrives at home in time for them to do the few chores common around a farmhouse; so they are ready, as the freight wagon backs up to the warehouse, to roll the barrels in the house, the floor being on a level with the wagon-bed. carefully weigh each barrel, and mark its gross and net weight on the label.

The honey is stored in these barrels. until sold, without any other care—except a few dozen cases of 60-pound square caus for farmer trade. If barrels are made of a good quality of staves, kiludried, and iron-hooped, the barrels then stored a short time in a dry, airy room, and the hoops driven the day barrel is filled, they will never leak. That is our experience for the past twenty years; sending barrels thousands of miles, and to nearly every state east of the Rockies. We must use such packages for extracted honey as our markets demand. next best package is the 60-pound tin can, cased; and where good cooperage cannot be had, and at cheap figures, the boxed tin can package is perhaps as good as any. Our home-market consumes about 10,000 to 12,000 pounds of extracted honey, and 500 pounds comb honey per year.

The extracted is sold in common tin pails, holding three, five and ten pounds each. We furnish every grocery store with the honey in these pails; and, to catch some customers that do not want to buy the pails, they are allowed to pay for pail and honey, and, when the pail is empty and clean, they can return it to the store and get pay for it, the same as it cost.

Almost all kinds of gummed labels will not stick to new tin cans or pails,

but they will stick for all time and not wash off, if put on with a paste made of demar varnish reduced with alcohol.

PLATTEVILLE, Wis., March 20, 1900.



MPROVEMENT IN STOCK IS
THE MOST HOPEFUL FIELD
IN COMMERCIAL BEE-KEEPING. BY J. E. CRANE.

(The prize article.)

"In what direction is commercial beekeeping susceptible of the greatest improvement?" Somehow, the editor of



the Review has a happy knack of going straight for the most important facts in connection with bee-keeping; and this question is no exception to the rule. There are certainly many directions

in which commercial bee-keeping is susceptible of improvement. Yet, doubtless, there is no class engaged in any branch of rural industry more thoughtful or studious than those engaged in commercial bee-keeping. Probably no other branch of rural industry will show so large a number of inventions and improvements connected with it, as will bee-keeping. On the other hand, few animals or plants that have been long under cultivation by man show so little change or improvement as do bees.

It is not certain that the great mass of bees to-day are any better for honey gathering than in the days of Virgil or Aristotle.

So busy, indeed, have bee-keepers been during this nineteenth century inventing hives, boxes, sections, supers, foundation, smokers, extractors, with systems of management, manipulation, and a thousand and one other things connected with bee-keeping, that they seem to have almost forgotten the possibilities of improving the bees themselves.

Recently, in looking over the index of one of our bee journals devoted to the interests of bee-keepers, I found that while some hundred of subjects were indexed, all of them of interest I have no doubt to bee-keepers. I found but one item on "improvements;" and, on looking that up, I found it was improvements in hires and not of bees. In looking over Langstroth's work. I have failed to find one item, even if we except changing from one breed to another, in the index of some fifteen hundred subjects indexed, on the improvement of our stock of bees. While the fruit grower has his improved fruits, the florist his improved variety of flowers, the sugar producer his improved beets, the dairyman his improved cows, the wool grower his improved sheep, how many bee-keepers have their yards stocked with improved bees? Yet, I doubt if anything connected with beekeeping is any more susceptible of improvement at the present time as the bees themselves.

By improvement I mean not simply purity of breed, or color, or gentleness, but rather the ability and disposition to gather the largest possible amount of honey, and store it in the whitest combs free from dirt or propolis, or the largest amount of well-ripened honey for the extractor, with the power to transmit these qualities with a good degree of certainty to the next generation.

A few bee-keepers have been working along this line, and have been well rewarded for their efforts; but the great mass of bee-keepers, there is every reason to believe, still depend upon natural swarming for queens, with perhaps an occasional queen purchised from some queen breeder. Can this be because bees are not as susceptible to improvement as cabbage, or carrots, or sheep, or pigs? There is reason to believe they are even more so. Is it not rather because the attention of bee-keepers has been taken up

with hives, implements, methods of manipulation, or management, or discussions of the different races or breeds of bees supposed to be already nearly perfect? Now, suppose, for a time, we leave the improvement of hives and fixtures and manipulations, and attend to the improvement of the *bccs*.

Here is a field as yet almost untonched; save by the few brave pioneers who have blazed the way, so to speak, and are ready to welcome the crowd if we will but follow their lead. Can we in any other way make so great an advance as in bringing the average of our bees up to that of our best stocks? If half the efforts that have been spent in producing a non-swarming hive, had been spent in producing a non-swarming breed of bees, I believe we should now have been far in advance of our present position.

Another reason, perhaps, is the general feeling that each individual queen, or colony, of any given race or breed of bees represents a certain definite character; instead of being exceedingly variable. It is so with all breeds, to a greater or less extent. A few years ago I bought a heifer calf from one of the best Jersey cows I have ever known, and yet, although its sire was an animal of fine pedigree, the heifer has grown to be a very ordinary cow.

In visiting a farmer not long ago, he showed me his choice herd of dairy cows. As we passed along he would talk in this way: "This cow gave me last year 400 pounds of butter; this one 384 pounds; this one 418, and this one 300 pounds when two years old." I complimented him on having so fine a herd, when he replied: "Yes, they are quite satisfactory now, but it has taken me quite a number of years and a good deal of care to bring them up; but it pays." He has the same breed to-day that he started with, but by constantly breeding from the best he has, I presume, nearly or quite doubled the product from his dairy. Now, suppose that, instead of trying to improve his stock, such stock as he had, he had spent

his time trying one breed, and then another: or in improving his stables, or his butter making implement, or marketing packages, or milking machines, what would have been the result? While he has not overlooked these smaller matters, he saw an open field for improvement which he occupied, and has made his business a success. Will bee-keepers be as wise?

I do not suppose that all of the honey secreted by the flowers will ever be gathered, even by the best of bees, still less will the best or most productive bees it is possible for man to produce ever get honey where none is to be had; but, if we can breed from our strongest and most industrious stocks till fifty er seventy-five such shall gather what one hundred are now required to do, we shall at least save what it requires to keep the extra number of colonies. I believe we had better, for a time, look for Apis Dorsata avilan air tands. If we fail to find it, we may perchance, find something even better.

What I have written so far may seem quite the retical, but I believe it has a solid basis in fact. I will not give in proof what a few isolated individuals have done, who are far away where distance lends enchantment, although I might safely do so, but rather give a few facts from my own experience. It may be remembere i 'w many readers of the Review that two articles from my pen bearing on this subject appeared in the Review. I became disgusted with the superior qualities of breeds as a whole. I had found some colonies of black bees greatly superior to the average Italian; while the qualities i the three-banded Italians I had found, from many years experience, to be exceedingly variable. I advanced the theory that great improvements might be made by careful breeding for this purpose. That I might know what had already been accomplished I bought as go la lucen as money would buy from a jueen breeler whom I had reason to believe had for many years been trying to

improve the productions of his bees. I was unprejudiced, and seeking for the truth. During the summer of 1808 I reared some thirty-five young queens from this purchased queen. Of course, these mated with my own drones, or drones from my old stock.

The spring of 1800 found me with enough of this cross to judge somewhat of its value. The colonies of this stock were scattered through two yards, and had the same care as my old stock.

I did not have long to wait, however, to note a difference after the flowers began to bloom; for I could tell the hives containing these young queens about as readily by the extra amount of early honey gathered as by their color, which was quite distinct from my own. The season proved one of the poorest I have ever known, yet these bees showed their superior working qualities during the entire season.

In September, when I came to look my hives over to see how much honev each one had for winter, I found invold stock to average ten or twelve pounds in their brood-chamber, while the new stock averaged not far from twenty-five pounds. nearly or quite enough to winter on. Later, in November or December, I wished to get rid of some honey in some old drone combs, and placed them in the sun on the south side of the barn out of the wind, as the weather was quite cool, to see if perhaps the bees would take it I was surprised to notice that almost every bee that worked on it and they were numerous was the descendent of this purchased queen, as could easily be told by the color, while I had vet in my vard some twenty-five of my old stock of bees. Whether trying to gather honey at so unseasonable a time of the year is a virtue, or otherwise. I will not attempt to decide, but it shows at least their vigor, energy, and determination to get honey under adverse conditions.

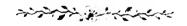
Another point in favor of these bees, although only a cross between superior stock and my own, was that they run very evenly; i. c., what seemed to be true of one seemed to be true of all; showing that the queen I had purchased had come from stock bred for productiveness, for many generations; and was capable of transmitting her good qualities in a very marked degree.

To accomplish such improvements in bees as I have outlined, the honey producer should be able to rear all of his queens from the most productive stocks in his own yard, or from the best queens to be purchased; and this involves the necessary intelligence and skill for rearing artificially, with ease and rapidity, all his young queens from year to year.

In closing, let me say that however it may be with others, I am satisfied that, for myself, there is no direction in which I can make such decided and paying improvements in the production of honey as in the rearing of all my queens from the best and most productive stock to be found in my own apiaries, or that can be purchased for a reasonable sum of money.

To this end I shall devote my energies, as never before, that the present season may show a large advance over the past in improving my bees.

MIDDLEBURY, Vt., May 9, 1900.



MPROVEMENT OF BEES IN THE DIRECTION OF NON-SWARMING IS THE MOST HOPEFUL FIELD. BY E. S. MILES.

To the man who desires to make the production of honey, more especially comb honey, his sole business, there appears one serious drawback; one difficulty that perhaps makes as much extra labor as any one thing connected with the business. I refer to the disposition of bees to swarm. While it may not be the most hopeful field of endeavor in beekeeping, I believe that the person who succeeds in solving the swarming problem

in working for comb honey, without caging the queen or weakening the colony, will be entitled to immortal fame, at least among bee-keepers, and will be bestowing a boon on bee-keepers equal to the movable frame hive. With no swarming to watch for, the beeman could locate several apiaries, and produce enough honey with his own labor to bring him a good income, even with honey selling lower than it does now.

Of course, we might produce extracted honey, but were everybody to raise extracted there is no telling where the price would go. I know by experience in selling honey that a great many people won't use extracted honey at all. There is an attraction about nice comb honey that appeals to the eye; and what looks pleasing, tastes good.

I believe the most hopeful field for commercial bee-keeping lies in the improvement of the stock, in the direction of non-swarming. There are some strains of bees not so much addicted to swarming as others. Take such a strain and use every means available to prevent swarming, breeding always from colonies that are not inclined to swarm, and I believe you will, in time, have a non-swarming strain of bees. Bees have, in times past, been bred mostly from the worst swarmers; it is the easiest way to get good queens and increase for those who do not make a business of bee-keeping; but I think the time is coming when those making a business of bee-keeping will reverse this practice, and breed from those that don't swarm. Now, I will have to plead guilty to the charge of breeding from swarming colonies myself, I was, like all beginners, anxious for increase, and glad to have them swarm. I soon saw, however, that the colonies that did not swarm were a good deal the most profitable in honey; so I have reared a few queens from some that did not swarm, and they were way ahead of the average bees. The worst year for swarms that I have seen, about one-third of mine run for comb honey did not swarm. Other

years I have had from none to eight or ten swarms from thirty to fifty colonies. But each season the bees have to be watched, and this watching is what we want to do away with.

There are many plans of dividing and uniting in the fall and thus keeping down increase after a fashion, but we want the whole force of one queen to stay together through the honey flow in order to get good crops of fancy comb honey.

How to do this without anyone on hand to watch for swarms is, in my judgment, the greatest problem now before the beekeeping fraternity.

DENISON, Iowa, May 9, 1900.





SSOCIATION AND CO-OPERATION THE MOST HOPE-FUL FIELD. BY C. A. HATCH.

Along the line of hives, supers and fixtures, there does seem to be much chance of great improvement. Our im-



plements have been so simplified and improved that he would be a bold spirit, indeed, who would start with the idea that he could much shorten or cheapen operations, and there-

by add to the income by lessening the cost.

Methods have been explained, discussed and examined so often and so fully that a practical man can not hope for much along that line, to either increase the crop or income.

But when we have got the crop produced and ready to fix for market, the whole mass of bee-keepers are at sea; no fixed and uniform method of grading or style of package prevails. If a dealer orders a certain grade of honey from

twelve different producers, he is liable to get one dozen kinds as to grade and package, even if the quality is uniform, and it is the producer who has to stand the loss to even it up. One or two of the twelve producers will undoubtedly sell at a different price than the others; maybe at a loss through ignorance of its true value. Every producer is not by nature a salesman; then why should he keep trying to be one? Are we, as a class, so stupid, or full of conceit, that we are unwilling to say there is something we do not know; something someone can do better than we can?

Co-operation and association would give us a chance to put the selling of our crop into the hands of a good salesman, to have all our honey graded by a competent grader who works under instructions from a properly authorized person competent to establish a grade.

Our packages, both for comb and extracted honey, would be uniform; so that a dealer could buy a carload all alike, and a sample would be a sample of the whole.

Packages, being ordered by the carload for the association, could be purchased at greatly reduced prices and shipped to the user at much less cost for freight.

Below are given, in a condensed form, some of the essentials for co-operation, any feature of which admits of much elaboration.

In order to establish a bee-keepers' and honey exchange there must be enough beemen of one mind who produce enough of bee products to make it an object, and the nearer it comes to embracing all of the beemen in the territory covered, the better it will work; for it is the outsiders and those who wait to "see how it works" that make trouble; it is much easier to criticise and find fault than it is to be a pioneer and bear the brunt of organization and starting the machinery necessary to carry on a successful exchange.

This means a giving up of many of our individual rights for the common good. "The greatest good to the greatest num-

ber" must always be the motto of successful exchanges, and a willing and cheerful agreement by the minority to the will of the majority. This similarity of ideas and oneness of purpose must be the foundation of associated effort. First, the association of ideas, next, the association of individuals holding those ideas, then the association of pro-incts and the division of the profits of the association. All this will cost effort, and money, and, in the pioneer stage, may cost even more than the profits; but, if the course is maintained, results are sure and certain.

Concentration of products is another essential. First, that all may be inspected and graded according to a uniform system, for no two individual bee men grade their honey alike, and buyers have to take all this into account, and buy on a margin large enough to provide for all variation in grading.

Car lots can thus be shipped at one time, thereby getting a rebate on rate of at least one-half. Buyers, also, can inspect a whole consignment at one place, thereby saving expense to them and enabling them to put more money into the purchase price. The selling agent can keep better posted on prices, and know better how to get the most out of the product, than many individuals with divided interest, scattered over a wide territory can hope to do.

Competition of buyers could be more easily obtained where there is a large amount than where the product is scattered over a wide area. Cash sales could often be made, thereby avoiding consignment on commission, which is always more or less unsatisfactory.

Uniformity of package is another thing that can be secured by association and mutual agreement. Bee-keepers will never realize the best prices for their honey until certain kinds of honey are put up in a uniform package, the same as dairymen put up their products.

To summarize—

- 1st, Community of thought;
- 2d, Association of individuals;
- 3d, Concentration of products.

Advantages—

- 1st, Saving of freight rates;
- 2d, Uniform grading;
- 3d, Encouragement of cash buyers;

4th, Relief of individuals from the trouble and annoyance of marketing their own crop;

5th, Stiffening of prices by knowledge of markets, etc.

RICHLAND CENTER, Wis., May 7, 1900.



MPROVE YOUR STOCK BY SE-LECTING THE BEST QUEENS AND DRONES IN BREEDING. BY S. E. MHLLER.

In response to your advertisement in April 15th Gleanings "Which is the Most Hopeful Field?" I will offer my ideas for your consideration.

As you have sounded the key note by naming several problems that might be considered, I will make a passing note on most of them, and dwell more at length on those that I consider the most hopeful fields

The wintering problem, at this age, can scarcely be considered a serious hindrance to bee-keeping. A few may have it to contend with, but I think I am safe in saying that the great majority do not look upon it with much auxiety.

Planting for honey alone we may consider as unprofitable; yet we should not neglect to encourage the growing of farm crops that are profitable as such, and at the same time vield nectar abundantly; such as white alfalfa, alsike, sweet clover, buckwheat, and probably a few others, in some sections of the country. We should also, as far as possible, stay the destruction of forest trees and wild plants that pro luce any considerable quantity of nectar. Among these are the basswood, maple, smartweed, heartsease, Spanish needle, boneset, and many others indigenous to the various sections of country. The bee-keeper himself should know which plants rank highest in this respect in his own immediate locality,

Do not understand me to mean that the farmer should vacate his tillable land and give it up to plants commonly called weeds; but, as weeds will grow in nearly all land that is not cultivated, why not have a weed that will produce nectar instead of having the more noxious kinds? Let us practice this ourselves, and educate our neighbors along this line as far as possible. Is it not a fact that many farmers who are raising bushels of cockle burrs on their farms each year, are horrified at the thought of a plant of sweet clover coming on their farm.

I am aware that some bee-keepers who are more particular than wise contend that sweet clover honey is not fit to eat, but such talk is sheer nonsense.

If my bees can not gather honey that will bring 8 cents per pound (for extracted) I would rather have them gathering 4-cent honey than doing nothing. Sweet clover here comes at a time when the bees have practically nothing else to do; and I wish there were a thousand acres or more within reach of my bees. It can easily be induced to take the place of more noxious weeds, and I have no doubt that many of us will live to see it planted as a profitable farm crop, especially for soiling, and redeeming dry clay soils. There is much room for thought and labor as well as improvement in this field.

In hives and fixtures I think we are so near perfection that it is simply a matter of taste which kind we shall adopt; and each bee-keeper should be able to judge for himself, better than any one can tell him, what kind of hive is best adapted to his own particular locality. Adaptability to climate and time of main honey flow, ease of manipulation and the securing of the greatest amount of honey in the most attractive form for the market, should be the chief considerations in adopting a hive. In regard to implements about the apiary, use the kind you prefer and can use most skillfully, and do not discard what you have for something new simply because some one says it is better.

Location. Here, Mr. Editor, you have raised a question. You speak of Mohamet going to the mountain. Now, if all of the Mohamets should go to the mountain would it not soon be overstocked? And are not the Mohamets who are already there giving us gentle hints to keep off the mountain, that it is already fully occupied?

Likely, the young man who intends making bee-keeping his vocation for life would do best to first find the best location to be found, taking into consideration, of course, honey resources and nearness to a good market.

But, as a rule, the bee-keeper is not by instinct a rover, and loves home, family, friends and surroundings better than the gold that he might hoard by going to a more profitable location; and a move with family and all costs considerable: and often the place he leaves has to be disposed of at a sacrifice; therefore a move to a better location is not practicable for the great majority of bee-keepers. And is it not a fact that the best locations have been already, or soon will be, occupied? Hence, we (the majority of us) must abandon this field, and I therefore take it that the question really is, how shall we best improve the opportunities that lie around us; or how shall we make the most out of our bees where we now

This is the question that confronts the most of us, and, to my way of thinking, the most hopeful field lies in the improvement of our bees. We need a strain of thoroughbred bees.

We will, for example, suppose a case of an apiary consisting of one hundred colonies, and take for a full crop, or 100 per cent, 100 pounds per colony (you may suppose it to be either comb or extracted whichever suits you best.) Now, taking apiaries as they run, is it not a fact that among the 100 apiaries we will find some colonies that do not store over 25 per cent of a full crop; while others in the same yard, having access to the same fields, will store over 100 per cent, and

still others will store all the way between the two extremes?

Do the best colonies fly farther and gather sweets from fields unexplored by their neignbors? Do they work earlier and later and make more trips in a given time? Do they carry heavier loads? Do they work on flowers that other bees pass by because their probocis is not long enough to reach the nectar? Or do they just work and work, while many of the other colonies hang around the hive? Probably no one will answer these questions; but the fact remains that some colonies are far ahead of others: and this. in my humble opinion, goes to prove that there is vast room for improvement in the strain of bees we are keeping.

If every colony were equal to the best, what a yast difference there would be in our pocket books after the crop is sold.

Do I hear some one say, "Oh, that is nonsense; my colonies never vary that much." Perhaps they do not, you may have brought your bees up to a higher standard, nearer to thoroughbreds, but I am speaking of apiaries of all kinds, inclusive.

Evidently, there is plenty of room for a strain of thoroughbred bees; and the question arises, how shall we produce them?

Probably we shall never find a better strain of bees than those that come from Italy. That is, we shall find none which offer us better stock to commence with, and continue to improve until we have reached as near perfection as we can get.

There is some difference of opinion among those that we may consider good authority as to whether the Italians are a distinct variety, but let that be as it may, they possess typical characteristics sufficient for our purpose, hence we will take the imported Italians as a foundation on which to build

Now, let us go back to our 100 colonies. We will suppose that ordinary care has been exercised in their breeding, and that imported queens have been introduced from time to time. The best

queens have always been used for breeders, still we have colonies each year that do not come up to our ideas of a standard. What is the remedy? Let us see. Let us pick out ten of the best; and then out of the ten let us take five of the very best. Now, I mean the best in every way; not necessarily the ones having the most yellow bands. I think we should be satisfied with three, and not chase after golden bands at the expense of some more substantial quality.

We want, first, bees that gather more honey than their neighbors; second, queens that will fill a hive full of brood in a short time, and put a host of workers on the field of action just when most needed. Third, gentle workers; fourth, markings or color.

Having picked out such colonies, let us use them for breeders. Let us breed as many queens from them as we wish, and all of the drones we will need. Not a drone should be allowed to fly from the other colonies; they should be gotten rid of as far as possible by excluding drone comb; but to make sure, they should all be trapped and destroyed, or the colonies moved to another yard.

We should see to it that not one inferior drone is allowed to fly within a mile or more of our breeding yard.

Here is where we have made a mistake, we have been doing too much one-sided breeding. We have reared queens with all possible care from select mothers, and allowed them to fly out and probably meet a drone from one of the poorest colonies. This queen, after her workers have hatched and show up certain markings, is sent to some one as a tested queen.

Tested as to what, pray tell!

Tested only to the markings of the workers she produces.

What would we think of a stockman who had spent time, labor and money in improving his stock, and should then turn his herd of graded cows on the commons to meet with any stray, scrub-bull that might be roaming about?

Do not breeders of live stock look more to the sire than to the dam for improvement? Is not the most care and attention bestowed upon the sire, and do not results prove that it is the shortest way to improvement? For them, of course, it is the most economical, while for us the opposite is true.

Drones are cheap and plentiful in season, while queens require care and attention in rearing, hence we, to a certain extent, allow nature to take its course. Let us rear queens and drones from our best stocks, and bar all inferior drones.

Let us keep it up continually, and exchange from time to time with others who are following the same course, and I doubt not that in a few years we will have raised the standard of excellence several points. No doubt many breeders will say they are doing that very thing just now. Friends, how thoroughly are you doing it?

Try to do it *better*; and remember that the gold that comes into the bee-keepers pocket after the honey crop is sold, gives greater and more substantial satisfaction than the gold bands across the bees' backs.

Here, friends, is a field for untiring labor, faithfulness and attention. Here is a hopeful field with plenty of room for expansion, centuries have been spent in bringing our fruits and vegetables to the high standard of excellence to which they have attained. The same is true of horses, cattle, sheep, hogs, fowls, and all things domestic.

Let us labor faithfully and see if we cannot produce thoroughbred bees.

BLUFFTON, Mo., May 8, 1900.



ECOV BEE HIVES; HOW TO
ARRANGE AND PLACE
THEM, AND WHAT MAY
BE EXPECTED OF THEM.

BY GEO. A. FENTON.

My experience with decoy bee hives dates back seven years ago this summer;

when I caught nine swarms in decoys. Last year I caught fifty-three in decoys. I do not remember the number any other year, but it was quite a few.

I used a 30-foot rope ladder the first four summers, by throwing a long rope over a limb and tying it near the ground; now I use the single-pointed spur climbers, as I like them the best; the others are liable to fill with bark.



DECOY HIVE IN POSITION.

The most essential thing is nerre; as it is often thirty or forty feet to a limb. I take the tall trees so that the boys will not steal the bees, which they will do if they can get at them. Besides a good pair of spurs, I use about forty feet of small rope, and a hatchet to cut small limes, and to drive nails with; as it will be necessary

to nail the decoy hive so that the wind will not blow it out.

The hive that I used to put out as a decoy was the eight-frame hive, but I do not put out many now, as I lose quite a few by light-fingered boys; a box is as good a decoy as is needed, is light and costs less than a hive. If I use a hive as a decoy, I take one that has had bees in before, as it will smell of wax, and will attract the bees.

The decoy hive should be clean and free from bad odors, and set level. I put on a bottom board, the same as I use on a hive, with about four inches for the bees to light on, as I find the bees prefer it to one without any.

I take a piece of comb, the older and blacker the better, as it will smell strongly, and fasten it to the inside of the hive with a couple of nails.

I make the decoy as near like a hive as the box will permit. About 2,000 cubic inches will be about the right size. In putting out a great number of decoys it is better to put out a few extra large ones, and a few small ones, so as to get them all. A small swarm will go into a small place if they can find it.

I take the bees home as soon as found occupying a decoy, and put them in a hive early the next morning, as I fetch them in at night.

When I find I have a swarm, I take a box and go to the place, tie a rope to the box, climb the tree, draw up the box, let the swarm down, fasten the box in the same place, and rejoice.

I try to look at all of the decoys at least once a week; oftener if I get time, which will depend on the number of decoys and the distance I have to go. I put six decoys about seven miles from home, and did not go near them untill fall, when I brought home six nice swarms.

I can see no difference in the kind of tree a decoy is in, and I would select a smooth-bark one as that would be the best to climb. I have caught swarms in a small tree eight or ten feet from the ground. The decoy must be in the shade;

as the bees will not occupy one sitting in the sun.

I believe the edge of the woods is the best, as I have the best results there. If Mr. A loses a swarm and it goes to the woods, a mile or two away, the first part of the woods the bees get to will be the place they will look for a location.

I know of no reason why so many swarms were caught here, unless the farmers who have a few colonies do not watch them, and there is no large timber (except near here) for about thirty miles around.

PINE ISLAND, Minn., Dec. 18, 1899.



DON'T STRIKE at cross bees to kill them. Take a little paddle, or thin strip of wood, and wave it rapidly back and forth in front of the face—something as one would work a fan on a hot day. The rapid movement excites their fury; they make a dive for the moving object, and get their heads cracked; so says E. R. Root, in Gleanings.

PHOTOGRAPHS have not come in very freely in response to my offer of \$5.00 for one to use as a frontispiece in the July Review. Only one has been received that is suitable. The most of them that come are too small and indistinct. They are lacking in definition, or sharpness, as I explained a few months ago in the Review. A certain amount of softness, if in the right place, is very desirable in an artistic picture, but the half-tone process puts so much softness into the picture that it is almost impossible to get a photograph too sharp for this purpose. I shall be glad of more photographs, and will pay \$5,00 for any that I think well enough of to use as a frontispiece.

A NEW HOME is what the Review will probably have before the summer is gone. I owned four lots, but the house was an old one greatly in need of repairs. The establishing of so many factories here of late has caused a boom in real estate, and I decided that I better put the extra lots and the old house into a new house with less land, but nearer the center of the city: so I have sold the old home (but not without many pangs of regret), have bought a lot further down town, and am building a new home. I have been compelled to give up a trip that I expected to make to Canada this summer, because there is scarcely a day that I am not needed to decide some question regarding the work that is going on at the new house.

CANADAS AND A

WORKERS LAYING EGGS AT WILL.

There has been much discussion as to whether worker bees could lay eggs at will, or whether they were enabled to perform this act from the kind or quantity of food furnished them while in the larval To aid in the solution of this problem, Mr. Arthur C. Miller of Rhode Island, made the following experiment: He formed a nucleus of bees sufficient to cover four L combs. Three of these combs were dry, empty combs, while the fourth contained honey and pollen alone. This was done on the 5th of May. On the 12th the first eggs appeared; on the 15th they were abundant; three days later they had all of the symptoms of a colony badly afflicted with laying-workers. Unless some of the bees from which the nucleus was stocked had been reared in a colony where queens were being reared, it would seem that this experiment proved that workers would lay eggs at will.

PANARATERE

MOVING BEES IN WINTER.

There is a general belief that it is detrimental to move bees in winter—or to disturb them in any way. Perhaps it is in some instances—much depending upon

the character of the food. On this point I wish to quote a little from a private letter recently received from my friend Herbert Clute of Wisconsin. He writes: "We bought 75 colonies and moved them 70 miles on a sleigh right in the dead of winter. We were snowed in two days and had to shovel like good fellows; and then put on four horses to haul the load of bees. We passed through drifts five or six feet deep. We put the bees in the cellar with the others, and, in March, we began feeding honey and sugar mixedone-fourth honey and three-fourths sugar. In April the bees were set out, and there were lots of brood and plenty of young bees. We did not lose a single colony. Boxes are on and bees began swarming two weeks ago (May 20)."

ADVANTAGES OF A SYSTEM.

Of the many good articles that I have laid before the readers of the Review, I believe there has been none in which I have felt more pride and satisfaction, none that I have felt was more practical and really helpful, than the opening article for this month. Its author, Mr. N. E. France, is, withal, a modest man, but he is a good business man. Not only this, but he is thoroughly honest and reliable. One instinctively feels that he is a man who can be depended upon—one whose word is as good as his bond. He has looked upon bee-keeping as a business, and has gone to work and systemized it. His implements and methods may not be the best for everyone. He admits that himself. His quadruple hive is expensive, but it enables him, by having populous colonies and plenty of stores, to successfully winter his bees with very little loss. There is no packing of the colonies in the fall, no unpacking in the spring, no carrying the bees into the cellar, nor any carrying of them out in the spring. His apiaries come as near to running themselves as any with which I am acquainted. It seems as though almost the only work done was to go out and extract the honey when it was ripe. Then this work of extracting is so systemized that it is done very quickly and cheaply—150 colonies a day if necessary. When the flow is very abundant, as it is sometimes in basswood harvest, this matter of being able to extract the honey very quickly from a large number of colonies is very important, indeed.

In the picture that is given of one of his out-apiaries, it may seem that it contains only a few colonies, but it must be remembered that there are four colonies in each hive. I have taken the pains to count the hives in this picture, and I make 25. That means 100 colonies.

THE PRIZE ARTICLE.

I experienced some little difficulty this month in deciding as to whom belonged the prize for having furnished the best article upon the subject of "Which is the Most Hopeful Field?" Some of my correspondents did not quite catch the true spirit of the topic. As the years go by I see more and more clearly the difficulty of so expressing myself that it will be impossible to be misunderstood. Some got the idea that I wished to have it settled as to which object in bee-keeping would be the most desirable to have accomplished. For instance, one man wrote in favor of the prevention of swarming; making a strong argument as to its desirability, and setting forth fairly well the benefits that might accrue from its accomplishment, but his article lacked in showing the hopefulness that might be expected to accompany such efforts. An object may be very desirable, when there are only slight hopes of securing it. We not only wish to labor for a desirable object, but we wish those labors to be acaccompanied by reasonable hopes of success.

It is a significant fact that all of the articles, with one exception, urged us to labor for the improvement of our bees. Mr. Hatch very ably advocates, and sets forth the advantages of, combination and

co-operation; and where the conditions are such that these principles can be put into successful operation it is likely that quicker, if not more desirable, results might be obtained than by working for the improvement of our stock. When there is a crop of honey in California, or in Colorado, and only a small general crop, the bee-keepers in those states can work in concert to their great advantage. They can in other years, but the benefits are less striking. Taking bee-keepers as a class, all over the country, they are too numerous and too widely scattered to do much in the way of co-operation. The bee-keepers' Union, or Association, as it is now called, comes the nearest to successful co-operation of anything that we have of a general character.

Improvement of stock is something that almost any bee-keeper, almost anywhere, can work for with fair hopes of success. Much has been said regarding the improvements that have been brought about in cattle, sheep, poultry, plants, etc.; it must not be forgotten, however. that many of these improvements have come about as the result of care, food and The long horns and sinewy muscles of the ox are no longer needed in defending himself against the attacks of wild beasts. Care, and shelter, and food. eventually make an animal or plant less able to battle for life with the forces of nature. At the same time these changes in the animal or plant make it more desirable for man. The battle with nature made the animal or plant less desirable for man's use. Battling with nature has brought out and developed in the bee those very characteristics, hardiness and honey gathering, that are the most valuable to man. Chaff hives and warm cellars, and the like, this "coddling," so to speak, has not improved the bee. At the same time there is no disputing that there is a difference in bees, and that by crossing and selection, and breeding in the right direction, we can improve them. but we must understand what we are working for, and work intelligently.

EXTRACTED.

BELGIAN HARES AND BEES.

Why the Hare is Valuable, and Why It May be Kept in Connection With Bees.

I am a believer in specialty; and I believe that the greatest success with bees may be secured by keeping bees alone in the proper locality. At the same time I recognize the fact that there are some localities in which bees may be very profitable in some years, and in others they will pay no profits whatever. Then there are people who delight to have a garden, and a cow, and some chickens, and some bees. So far as I am able to judge, there is nothing at present that can be taken up in connection with beekeeping that offers greater inducements, to right persons, than the raising of Belgian hares. I mentioned in the last Review that Prof. Cook of California, had written an article on this subject for the American Bee Journal, and that I might copy it. The Professor is right on the spot where the hare industry is at its height, and is therefore able to speak from actual observation. Here is what he has to say:-

"The Belgian hare industry has attained marvelous proportions in an exceedingly short time in Southern California. Our own county of Los Angeles is the center, the city of Los Angeles being the focus. For a new business to gain standing so quickly argues that it is more than a fad. This fact becomes emphasized when we learn that some of our most clear-headed business men are engaged in this Belgian hare propagation. One of the best business men I know in Southern California belongs to a firm that is said to have invested \$25,000 in this new industry.

The Belgian hare, like the shorthorn cow, has been so carefully bred that its habits are very much modified. Its growth and vigor are something remarkable, its prolificness is exceedingly great, and it is so neat that it can be bred and cared for in the small compass of a drygoods box and yet retain its vigor, health and fecundity.

It has often been asked if there is not danger in introducing this new comer into our State and country. May we not repeat the experience of Australia in importing the European hare into that country? The law first suggested by Darwinthat introduced species are always likely to manifest greater vigor and prolificness than is shown by the native, closely allied species—should always make us wary to contemplate any such enterprise. As I have stated in our public meetings, where this matter has been under discussion. I do not think the danger need be feared in the case of the Belgian hare. Like the shorthorn, the Belgian hare is bulky, fat and logy. This rabbit, therefore, while admirable for feeding and breeding, would be illy adapted to succeed in the struggle of life out on the plain or in the bush. I think in such a case the excellence of his flesh would soon be tested by dog or hound rather than by human epicure. I have never seen the Belgian hare on the race track, but from viewing him from the show-box or rabbitries so common in this region, it has never seemed to me that he could be any match at all to the cotton-tail or jack-rabbit. This latter has a hard enough time in its struggle against dog, coyote, and the hunter. I greatly doubt if the Belgian hare could exist at all.

We know that the care and domestication of the silk-moth by man has made it so dependant upon him for its food and protection that were we to cease rearing silk-moths for one year, it would cease to exist. In developing the splendid insect with an eye single to silk-production, we have utterly destroyed its ability to care for itself. I think the Belgian hare is, like the silk-moth, only to a less degree, less qualified to fight its own battles. I believe running wild and extermination would go together. Another reason why this danger would be minimized comes in the very value of these animals. Like the lost coin, the whole country would be swept and garnished to find a single missing rabbit. Therefore, I do not believe we need to fear the introduction of this valuable animal into our State and country.

I have alluded to the great value of these animals. I have heard of cases where \$250 or \$300 have been paid for a single male. Of course, this shows that great pains have been taken to develop these animals in the way of prolificness and meat-production.

There are several points in this business which will aid to foster its rapid development. The Belgian hare puts its

entire energy into growth and reproduction. Thus it exercises very little, and a large number of rabbits can be kept in a small space. I know of a rabbitry of over too individuals kept wholly in drygoods boxes. These rest on a platform about three feet from the ground. The whole space occupied by the rabbits is less than three rods square. Thus the man in the city is not precluded from engaging in this business.

Again, the animals are so neat that illhealth is hardly likely to interfere with success. I have heard of only one case where any one has had any loss from disease. In this case there was a sore lack of knowledge of the business. I think it as safe as anything in which one

can engage.

Again, the cost of keeping rabbits is very light indeed. A friend of mine, who is a very careful man, estimates that when hav is \$9.00 a ton, two cents per month will keep a full-grown rabbit. It is said that alfalfa hay alone, dry and green, will do for food. It is probable, however, that they might do better with a

greater variety.

It follows from the above that it will cost very little to produce meat. Another friend said to me a few days since, 'I can produce the meat at a good profit if I can get nine cents a pound.' When we remember that it sells readily now for 20 cents a pound, we understand why the business is so profitable. The excellence of the meat is also a substantial argument in favor of the industry. Even epicures smack their lips in rehearsing the excellencies of the rabbit for table use. We had these on our table more or less for a week with very little intermission, and we all pronounced the meat first-class in quality, even to the last meal.

It is often asked, 'Will not the excitement soon pass by, and the rabbits fail to pay expenses?' When we remember the millions of mouths to be fed, the appetizing character of the meat, and the cheapness at which it can be produced, I doubt if we need fear that it will be soon overdone. Many prefer the rabbit to chicken, and 12 to 15 cents a pound is paid for chicken pretty generally throughout the

country.

One disadvantage that the bee-keeper labors under comes from the fact of off years. One off year is frequent, two off years in succession not uncommon, and he is a lucky apiarist who has not had more than once three successive off years.

Again, the bee-industry does not claim the whole time of the bee-keeper all the year, and he may well add another string to his industrial bow. Poultry-keeping has often served admirably for this extra string. I believe the Belgian hare will even eclipse the hen in this desired comradeship. I have a neighbor who lives between here and the foothills. He has a large apiary which has only been an expense now for over two years. I frequently pass by his place on my way to the canyons. As I have seen his brood of children—a very large one, by the way —I have felt pity for the household, despite the fine flock of chickens which adorn the home yard. I feel less pity now, as the gentleman told me the other day that he had made over \$600 clear in Belgian hares during the last year I am thus led to say: 'All success to a co-partnership between bees and the Belgian hare.'', Los Angeles Co., Cal.

HIVING SWARMS.

When and How Two Swarms can be Hived Together Advantageously.

I don't know whether it is because my locality is similar to that of C. Davenport, of Minnesota, or whether it just "happened" that we have fallen into the same way of managing things, but I know that I seldom read an article of his that I don't feel as though I were reading my own experience. In a late issue of the American Bee Journal he has an article on the management of swarms in securing the greatest amount of white comb honey, and the management is such that I know from experience, that it is the very best for our short, early white honey flows of the North. For that reason I copy it. Mr. Davenport says:—

"I have before in these columns mentioned the fact that I largely practice hiving two swarms in one hive. These swarms may be either natural or artificial. or one may be a natural issue and the other artificial—it depends upon circumstances, but it is all practically the same thing, and the thought may have occurred to some who have not been engaged in our pursuit long, whether it pays to hive two swarms together, and if more surplus can be secured in this way than if each swarm is allowed a separate hive. It undoubtedly pays with me, and I will endeavor to explain why. This will necessitate briefly describing my locality in respect to the time, character and duration of its honey-flows or yields, for upon these things or conditions—or, in other words, the locality largely determines the question of whether it pays to hive two swarms in one hive, but in this case the word 'locality' must be considered in a broad sense or view, for the conditions in some of the middle or even southern States might be similar enough in some respects to what we have here, to make the practice pay, while in other latitudes, even as far north as this, they might not.

As a usual thing the early spring flows here are sufficient to support brood-rearing, but after fruit-bloom, until white clover commenced to blossom, there used to be a short spell during which it might be necessary to feed in order to have brood-rearing kept up as rapidly as it should at this time, but of late dandelion bloom has bridged the gap between fruit and clover bloom. This has nothing to do with the matter being discussed, but I mention it because it is, to me at least, very curious how rapidly this daudelion bloom has increased. There has always been some here, but nothing compared to what there is at present, and formerly it was about gone soon after fruit-bloom. Of late it has kept in blossom more or less all the fore part of the season, in fact it is becoming too much of a good thing, for I have had bees working on it at the same time white clover was vielding, and when it is mixed with clover honey it nearly ruins the latter, for it is dark, rank-tasting honey, fit only for brood-rearing, or to sell for manufacturing purposes.

The properties of the two plants are such as to greatly favor both being worked when they are in bloom at the same time, for white clover, as a rule, does not yield as well during the fore part of the day as it does the latter, and dandelion yields and is at its best in the morning. Later the blossoms completely close up so that on low pasture lands here that may be literally yellow with its bloom in the forenoon, there may not be a single blossom to be seen in the afternoon.

Three years ago I extracted about 2,000 pounds of nearly pure dandelion honey before white clover commenced to yield. White clover usually commences to yield slowly about the first of June, basswood the first of July and lasts about 10 days. This gives us a white-honey flow of about 40 days duration, though the time this flow commences, as well as its length, may vary considerable, owing to the season or the failure of one or the

other of its sources; but I can say in favor of my locality that in my time clover and basswood have never both failed the same season. At least 80 per cent of what swarms I have are made or issue during the first three weeks of June.

I can imagine some are now saving. 'You are away off, old man; you should have your swarming all done and out of the way before your main flow commences.' This can not profitably be done The time previous to this, that is, here. the length of time between settled warm weather and the fore part of June, has not been sufficient so the colonies on an average will become populous enough to swarm sooner naturally, and so far as I understand it at present artificial swarming should not be performed until it is a necessity, in order to prevent natural Many of the strongest colswarming. onies might naturally swarm about the first of June, but my practice along towards the last of May is to take the combs of brood and young bees from the strongest colonies and exchange them with weaker colonies for empty combs, or those which contain no brood, and I consider that it pays, for it prevents a large per cent of the swarming that would otherwise take place, or have to be done.

Now it will be noted that what swarms I have, taking an average, will have about thirty days or less in which to gather white honey. As it takes the eggs about thirty-five days to develop into field-bees, it will be seen that these swarms have not time to develop brood into field-bees to work on this white honey flow, so the less brood they rear the more surplus white honey, for what brood they do rear is reared on this white honey; and another thing is, that with less brood to tend there is a larger force free for field-work.

Now, if two swarms are hived together in a hive the brood-nest of which is only as large as would be allowed if they were hived separately, only half the amount of brood can be reared that could be if they were each given a hive; and from long practical experience in the matter I know that taking one year with another I can here with swarms secure nearly, if not quite, as much again white honey by hiving two together; and I work for white honey regardless of increase; and also of amber and dark honey. Whether the practice would pay if one desired these things to be considered is another question.

When hiving two swarms in one hive, if small hives are used, two stories should be allowed for a brood-nest until they get

well started to work; then the lower one can be removed and more surplus given in its place; for often two large swarms will not stay and commence work willingly in one small hive, no matter how many supers filled with sections are placed on top. They can be forced to stay, of course, but this forcing is often a difficult matter, and they may sulk away much valuable time before commencing work.

Another important thing which will apply to swarms hived either singly or together, is to keep the empty hives in a cool, airy place until needed. A swarm hived in a hive that has been out in the hot sun is much more apt to desert, and after the swarms are hived their hives should be kept well shaded for a few days. The most satisfactory shade is obtained by the use of a shade-board, which is large enough to project over the hive six inches or more all around. But this board should not rest down flat on the hive cover; if it does, and is dark colored, as they soon get to be when made from unpainted lumber, it may do more harm than good. Provided the cover is painted white, there should be an air space of at least a half inch between the two.

With cool, well-shaded hives, and at first a brood-nest in proportion to the size of the swarms. I do not consider it necessary to raise the hive up from the bottom-board all around. I allow only the usual entrance in front, and place a queen-trap or entrance-guard on until they get well settled down to work. Of late it is very seldom that I have swarms attempt to desert, but I do not wish to run any risk with these big, double swarms, and when swarms desert they often leave without clustering.

With clipped queens zinc is not so necessary, but it might prevent a clipped queen being lost or destroyed by crawling into another hive, but when it is used, and there are a great number of drones with the swarm, it should be removed when they are anxious to get out. Then if it is replaced while they are having their flight, most of them will be shut out, and soon join the bees of other hives.

Southern Minnesota.

NEW BOOKLETS.

The Chicago, Milwaukee & St. Paul Railway is issuing a series of booklets regarding points of interest along its lines, and if you are interested in the western country, or contemplating a trip, write GEO, H. HI ALFORD, General Passenger Agent, Chicago, Ill., for the special publication desired, enclosing

four cents in stamps for postage for each one.

No. 1. The Pioneer Limited.

No. 2. The Land of Bread and Butter.

No. 3. The Fox Lake Country.

No. 4. Pishing in the Great North Woods.

No. 5. The Lake Superior Country,

No. 6. Cape Nome Gold Diggings.

No. 8. Summer Days in the Lake Country.

No. 9. Summer Homes, 1900.

No. 11. The Game of Skat.

No. 12. Milwaukee—The Convention City.

No. 13. A Farm in the Timber Country.

No. 14. Stock Raising in the Sunshine State.

No. 15. Hunting and Fishing.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or erooked, detached at the bottom, or with but few cells unseabed; both wood and comb unsoiled by travel stam or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted treight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

NEW YORK, N. Y.—There is a steady demand for all grades of comb honey. The receipts are not heavy. We quote as follows: Fancy white, 15 to 1/1 No. 1 white, 13/5 to 14/5 amber, 11 to 12/5 lanckwheat, ofto 11. Extracted honey is steady at the following prices: California white, 8/5 to 9/1 light amber, 5/6 to 9/1 light amber, 5/6 to 9/1 light amber, 5/6 to 7/6 to 10/6 to 10/6 light amber, 5/6 to 7/6 to 10/6 light amber, 5/6 to 7/6 to 10/6 light amber, 5/6 to 8/6 light amber, 5/6 light amber

Jan. 11. FRANCIS H. LEGGETT & CO.
Jan. 11. W. Broadway, Franklin & Varick Sts

CHICAGO, II.I..—We quote as follows: Fancy white, 15 to 16; No. 1 white, 13 to 14; fancy amber, 12; No. 1 amber, 10 to 11; fancy dark, 9; No. 1 dark, 8; white extracted, $7\frac{1}{2}$ to 8; amber, 7 to $7\frac{1}{2}$; dark, $6\frac{1}{2}$ to 7; beeswax, 28.

Mar. 14.

R. A. BURNETT & Co., 163 So. Water St., Chicago, Ill.

KANSAS CITY.—Receipts and supply light; demand tair at the following quotations: No. 1. white, 14 to 15; fancy amber, 13 to 14; No. 1 amber, 12½ to 13; white extracted, 8; amber, 7; dark, 6; beeswax, 25.

C. C. CLEMONS CO., May 4. 423 Walnut St., Kansas City, Mo.

NEW YORK.—We quote as follows: Fancy white, 15; No. 1 white 13 to 14; fancy amber, 12; No. 1 amber, 11 to 12; lancy dark, 11; No. 1 dark, 10; white, extracted, 8 to 8½; amber, 7 to 7½; dark, 6 to 6½; beeswax, 27 to 28.

Mar. 15.

May 4.

HILDRETH & SEGELKEN, 120 West Broadway, New York

BUFFALO, N. Y.—For four to six weeks there has been an excellent trade in all grades as quoted. We mge the marketing of all now, as berries will soon be plenutul and cheap. We quote as follows. Fancy white, 16 to 17; No. 1 white, 14 to 15; lancy amber, 12 to 13; No. 2 dark, 10 to 12.

BATTERSON & CO.

May 4. 167 & 169 Scott St., Buffalo, N. Y.

CHICAGO, III.—Demand for comb honey is limited. Sales can be made for lancy white at 15 cents. Other grades in proportion, as low as 10 for dark. Extracted is ialimited supply and good demand. White, 8 to 9; amber, 7 to 8, depending upon package and flavor. Beeswax, 28.

S. T. FISH & CO., 189 So. Water St., Chicago, Ills.

Queens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

M. H. Hunt & Son

Sell Root's Goods at wholesale and retail, at their prices. Our inducements are Strictly First-Class Goods, Cheap Freight Rates and Prompt Shipments. Our specialty Anything you want for your Bees. Send for our Catalog. Cash or trade for beeswax.

M. H. HUNT & SON, Bell Branch, Mich.

QUEENS THAT PAY

Are those from good stock, and reared right. I have reared over 1,200 queens from my "Doolittle" breeder, and tested over 100 in my own yard. The queens are large, and the bees are HUSTLERS All queens warranted good ones; no culls sent out. Prices; average untested queen, 60 cts; dozen, 56,00; select, 80,50; extra, \$2,00. "You send me the best queens I ever had. J. W. Hartman, Pickens, W. Va" Others write in the same strain. See May Review, page 164. Circular free. 6-00-tf

I. B. CASE, Port Orange, Fla.

See what the

CRANK SAYS.

The undersigned never was more successful in having fine cells built, and, consequently, in securing fine queens, than during a copions flow. Since May 1st many of those queens (three and five-band Italians) are now tested, and will be sold for 51.00 each; select te ted, 51.25; breeders, 52.00; and untested, 75 cts. Would you like a fine three-band breeder matched to a golden drone? I can supply such. Money order office, Warrenton, N. C.

W. H. PRIDGEN, Creek, Warrenton Co., Pa.

Exhibition Hives.

I shall probably make no more exhibitions of bees and honey at fairs. I have too many other irons in the fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them.

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new, but I would sell them at 15 cents each.

W. Z. Hutchinson, Flint, Mich,

Examine the Figures.

"The tall, wide, new, plain section has come to stay, and the sooner our bee-keepers make themselves acquainted with the fact the better for them." Hildreth & Segelken, New York City.

These people know whereof they speak, for they probably handle more honey than any other one concern in the U. S.

Having shown to the readers of the Review the different styles of supers we furnish this year, we are sure you will be interested to learn the proportion of sales of each. We have selected as an illustration the record of our Philadelphia Branch, which is fairly representative of our trade. Well, here are the figures for your study:

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985 P. Supers with 4^4, x_14^4, x_14^4,
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Descriptions of all these supers have appeared in the Review, and may all be seen in our catalogue for this year.

It is not too late to try some of these this season. Send your order to our nearest dealer. You will find a list of our principal dealers on the back cover page. Surely you cannot afford to delay giving these a trial. Parties who once use Root's Plain Sections and Fences continue their use. This is the best proof of their worth.

The A. I. ROOT CO., Medina, Ohio.

(Keep this before you.)

We pay cash for

HONEY.

We want honey; and ask correspondence from those having it to sell. State quantity, quality and style of package. We are dealers in green fruit and dried fruit and all kinds of produce.

S. T. FISH & CO., (Established 23 years.) 189 South Water St.,

CHICAGO.

Reference; First National Bank, Chicago. Your banker can show you our rating

QUEENS

Are my specialty. I have 500 colonies and can, if necessary, rm 1,000 nuclei. I shall have two experienced apiarists in my employ. I can begin sending out queens of this year's rearing as early as March; and throughout the whole season I shall send them

By Return Mail.

My bees are Italians, from imported stock, also from Doolittle, as well as from selected home bred stock.

Prices are as follows: Untested. \$1.00; 3ix for \$5.00; twelve for \$9.00. Tested. \$1.50; six for \$8.50; twelve for \$15.00. Best breeder, \$4.00.

Root's Goods

At Root's prices, plus carload rate of freight. 2-00-tf

W.O. Victor,

Wharton, Texas.

Hutto, Tex., April 10, 1900

T. F. Bingham,

Enclosed find \$1.75

Please send me one brass smoke engine. I have one already. It is the best smoker lever used.

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock.

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,
Augusta, Wisconsin.

The Flint Belgian Hare Association, Ltd.

Importers and Breeders of High Class Pedigreed Belgian Hares. All stock guaranteed as represented. Prompt shipments made to all points. Write for prices and full information. Rabbitry on Wood St. Business address, 214 Saginaw St., Flint, Mich. Both phones 28.

 $\mathfrak{k}_{\widetilde{B}}\cdot 1$ am personally acquainted with the members of this association, and know them to be thoroughly reliable. They have secured the finest stock that it is possible to secure, and 1 can assure ail purchasers that they will get the worth of their money - Editor Review.

I have several hundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We al-

so carry a complete line of other supplies.

Catalog free. R. H. SCHMIDT & CO.,
9-99-tf. Sheboygan, Wis.

Please mention the Review.

- If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

JOHN F. STRATTON'S CELEBRATED



Birmingham Steel Strings

for Violin, Gultar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catle

JOHN F. STRATTON, Importer, Manufacturer and Wholesale Dealer^e 811,813,815,817 E. 9th St., N. Y.

Please mention the Review.

1900 Queens 1900

For Business—Queens for Strong Colonies—Queens for large surplus. Competion in Quality, but not in price.

If you want queens, nuclei or supplies at bottom prices, send for my illustrated price list.

12-97-tr

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the Review. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

THE

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight.

If You Wish Neat, Artistic



Have it Done at the Review.

\$100=queen.

Several times in my life have I seriously considered the idea of attempting the development of a superior strain of bees. I knew that it would require years of careful, patient, persistent work in the way of selection, crossing, test ing, etc., and there have always seemed to be too many other irons in the fire for me to make room for this one. Sometime I may make the attempt; at present, however, I am glad to know that one man, by giving twenty years of his life to the work has met with a fair measure of success. I have reference to the breeder mentioned in my last advertisement of superior stock. Being a little curious to know along what lines he had worked, I asked him to tell me, and from his letter I make the following extract:-

In regard to the origin of my strain of Italians I would say that they were developed by selection and crossing. The first Italian queen that I ever possessed was of the Thos. G. Newman stock. The next was of A. I Root's red-clover stock, purchased in 1881. In 1882, I purchased one of friend Root's best imported queens, for which I paid \$600. She was a valuable queen, indeed; producing workers which were hardy and regular hustlers for gathering honey. I stocked my apiarry with her daughters, saving only a few queens of the other stock to furnish drones. This gave me a direct cross, which, I think, is the secret of my success.

In 1883, I found one of the daughters of the

In 1883 I found one of the daughters of the Root imported queen far out-stripping everything in the yard in the way of honey-gathering and comb-building; and her bees capped their honey so white that it made it appear the most beautiful comb honey I ever saw. In this queen I had an acquisition. I used her as a breeding queen. Her bees were not as handsome as the Newman stock; but beautiful noney attracted my eye and pocket-book more

than fancy bees

Permit me to say right here that I fear that about nine out of every ten queen breeders make the mistake of breeding for color; sacrificing

business qualities

I love to look at the beautiful, golden, five-banded Italians; and I wish that they were as good for business as the regular three-banded Italians; but I have tried them and found them sadly wanting

The queen from which I am now breeding is a wonderful queen, to say the least. Her bees are excellent honey-gatheiers; and came through the past severe winter in the shape; and are now just BOOMING. I would not part with this queen for One Hundred Dollars!

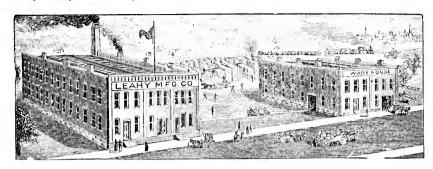
This breeder has arways advertised in a modest, quiet, unassuming sort of way, nothing in proportion to what the quality of his stock would

have warranted, and at last I have decided that I can help him, and benefit my readers, at a profit to myself, by advertising these bees in a manner befittingly energetic.

The price of these queens will be \$1.50 each. This may seem like a high price, but the man who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem to high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen SHOULD prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to each purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all: if, at any time within two years, a purchaser, for any reason what-EVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble. It will be seen that the purchaser runs NO RISK WHATEVER. If a queen does not arrive in good condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurely mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is ANY reason why the bargain is not satisfactory the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is REALLY SUPERIOR.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price, and that is in connection with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review for 1900, can have a queen for \$1.00. Of course, all arrerages previous to 1900 must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arrearages and to pay in advance to the end of the year.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superbindeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. 60., Higginsville, Mo.. East St. Louis, Ills. Omaha, Nebraska.

Gontraction

Of the brood-nest can be made very profitable if practiced in the right manner, with the right kind of hives and appliances, in the right locality and in the right time of the season. reverse will prove true if mistakes are made. Your locality may be one in which contraction, if rightly managed, would put many dollars into your pocket. All of these points are fully explained in one of the chapters of Advanced Bee Besides this, the CULTURE. book contains 31 other chapters n e qually important subjects.

Price of the book, 50 cts.; the Review one year (and twelve back numbers) and the book for only \$1.25.

W. Z. HUTCHINSON, Flint, Mich.

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free,

W. T. Falconer Mfg. Go.,

Jamestown, N. V.

ker W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

Page & Lyon,

Mfg. Co.

New London, Wis.

Nearness to pine and basswood forests, the possession of a saw-mill and factory fully equiped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular; price list,

and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Still They Come!

What? Why, orders for Hyde's Superior Strain of Bees. We are rearing Golden Halians from our famous \$100 breeder, "Victoria," Among the points of superiority are gentleness, beauty and honey gathering. Queens are very prolific. Bees do not crowd the brood-nest with honey, swarm very little and enter the supers readily. We also have 3-banded queens from our fine breeders, "Jewell" and "Beauty." Stock is hardy, gentle and industrious. These bees keep rolling in the honey while other bees are doing nothing. Prices of either race, for the rest of the year, untested, 75 cts; 6 for \$1.25; Select, warranted, 25 cts extra. Tested, \$1.25. Holy Lands same price. Special discount on quantities. Circular free. We give FREE a Select Testel Queen for every \$15,00 and a fine Breeder for every \$25,00 worth of orders, at circular prices.

O. P. HYDE & SON, Hutto, Texas. Listen! Take my advice and buy your bee supplies of August Weiss; he has



tons and tons of the very finest

FOUNDATION

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered ere. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies. Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

19



QQ

This is the original one - piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8 90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

I. FORNCROOK.

Watertown, Wisconsin.

If the

REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Violin for Sale.

I am advertising for the well known manufacturers of musical instruments, Jno. F. Stratton & Son, of New York, and taking my pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradiuarius." Red, French finish, high polish, and real ebony trimmings, price \$14,90. The bow is of the finest snakewood, ebony frog, lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and pearl dot in the end, price \$2.50. The case is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and bandles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is exactly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some instruments here that cost several times as much. I wish to sell 'his ou fit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not enturely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines, Iowa, manufacturer of and dealer in Apiarian Supplies. Send for circular. 1-96-6

Please montion the Review.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting."

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

'00 CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive.

J. H. M. COOK, 62 Cortland St., N. Y. City

Make Your Own Hives.

Bee - Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

Machines on trial. Send for Catalogue.

W. F. & JMO. BARNES CO.,

384 Ruby St.,

Rockford, Ills.

IIIIIIIE

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MINIMAN MANAGERY



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The Bee-Keepers' Review.

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W. Z. HUTCHINSON, Editor and Proprietor.

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NO. 7.

OVING BEES TO FALL
PASTURAGE. WHEN IT
IS PROFITABLE, AND
HOW IT IS DONE. BY
GEO, DEMUTH.

My locality turnishes surplus honey from clover and basswood only. honey is gathered after the basswood harvest closes, the bees thus becoming consumers in July. Twenty-five miles away, in a region of small lakes, are numerous "dead lakes," or swamps and prairies. In August and September the goldenrod and Spanish needle transform these prairies again into lakes, surpassing even their former glory, with their brilliant vellow surface stretching from shore to shore. Those that are dry enough to pasture present a silvery appearance from the abundance of boneset. In the adjacent cornfields, heartsease is plentiful during wet seasons; and on the sandy upland, goldenrod monopolizes the waste land.

My management at home has been such that the bees are brought through the white honey harvest short of stores; the honey having gone into the supers. This necessitates feeding for winter; the the expense of which, after a poor season, when most of the cash receipts must be invested in sugar, has sometimes almost

made me wish I had never seen a bee. In 1896 I moved a load of bees to this location of autumn flowers, and secured an average of about forty pounds of comb honey per colony. In addition to this, each hive contained enough honey to last until the next spring.

Since then a part of each year's program has been this "mid-summer outing;" and I have not fed any for winter since I began moving.

While the net returns from surplus honey secured by moving have been by no means dazzling, yet the cash realized on the time actually spent makes a per diem wage which, if continuous, would tempt most of us.

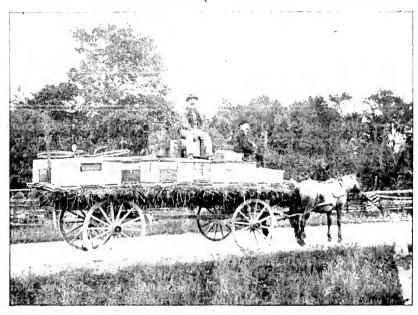
One year very little surplus was secured, yet if there had been none, the increased amount of brood reared and the filling of the hives for winter would have been ample pay for the time spent in moving.

Many have asked why I do not locate per nanently in this prairie region. If I were located there I would need to move here for the early honey flow. When the honey flow ceases here, the sections are removed, and, as far as they will go, extracting supers are adjusted. If I had enough extracting supers I would ordinarily extract all the amber honey; yet, as I have no trouble in selling this amber

comb honey at more that double the price of the same extracted, I have not seen fit to provide extracting supers for all colonies to be used only in Autumn.

Any colonies that are very heavy have the heaviest combs extracted to prevent cramping the brood-room. New swarms that have their brood-nest contracted are given empty combs to complete the set. The bottoms are now fastened to the hive bodies by two nails driven through the on lath or frame-stuff. Sometimes neither the bottom nor rim are nailed to the hive body, but a lath is nailed on each corner to the bottom, bodies and rim.

As there are generally at least two weeks after the close of the harvest here before there would be any great advantage in having the bees in their new location, I sometimes wait for a cool night. Moonlight nights are preferable for moving, but are not necessary—we are



ON THE ROAD.

bottom into the sides of the hive-body. To drive these uails the hives are stood on the back end. The bottoms are left on from year to year, unless there are reasons for taking them off, when they are easily removed. Rims two and onehalf inches deep, having the same outside dimensions as the hive, and covered with wire cloth, take the place of the cover. These rims are fastened to the hive body by two long slender wire nails, driven down through the rim into the edges of the sides of the hive. The cover and bottom are thus fastened with four nails. Hives having on extracting supers have the stories fastened together by tacking sometimes glad to have even the light of the stars.

The time for the journey having been selected, the top screens are put on and all the hive fastening done by daylight except putting on the entrance screens. These screens are fastened to a lath scored opt on the lower side and are fastened to the hive with two small nails. These nails are partly driven into the lath and the entrance screens are distributed before evening, that they may be put on quickly when the bees quit flying. When the top screens are put on, the cover is laid over them and the shade-board put in place again to prevent, if possible, the

bees clustering out. It is quite a task to smoke in the bees of fifty colonies and put on entrance screens during a hot July evening. If the bees are in the hives, as they should be, one person, with an assistant to load, can easily close the entrances and take to the wagon fifty colonies after the bees quit flying and before dark. If a hive should leak, the hole is plugged and no attention paid to the bees that are outside, unless they are in the driver's way. Bits of comb, not too old, make excellent plugs for leaky hives. is well to prepare one or two extra colonies, to be substituted for any that might leak badly.

I have moved on springs and on straw. Springs are preferable, being handier and lighter. When straw is used it is well to use a false rack on top of the straw. This is made of light pieces the length of the hay-rack, spaced at such distances that the cleats of the bottom boards will just catch over their edges. This false rack is simply laid upon the straw and wired to the end sticks of the hay-rack. It holds the hives in place, and requires much less straw, as no individual hive can settle down into the straw.

When bolster springs are used the hayrack is easily transformed into a bee-rack by nailing on extra boards lengthwise, spaced so as to hold the hives in place by the cleats on the bottom boards. The covers are packed in the lower part of the rack before the bees are loaded.

Unless the roads are rough, or the night is very warm, I drive as fast as the horses will walk.

Most of my frames are the Hoffman; but the loose, hauging frames go all right without any fastening or attention whatever. Perhaps if they rested on tin rabbets then might need fastening. I have never seen a frame moved out of place by handling.

After frost has killed the flowers the bees are moved home at once. The return trips are made during the day. No screens are now used, as the weather is cool. I brought them home last year

without fastening the covers, as the propolis held them firmly. Neither do I find it necessary to fasten the covers when hauling to an out-yard in the spring; but care must be taken in loading, that the covers of the different hives do not bind or they may be broken loose.

Owing to insufficient ventilation and an extremely hot night the first load that I hauled to fall pasture got "hot" when about twelve miles away from home. They were set off in a school-yard, the entrances opened, and the journey was not resumed until the next evening. When the bees wedge themselves in the entrance and begin to squeal, it is time to unload and open the hives. Since using the deep screens on top no trouble has been experienced. The risk item has grown less with each trip until it has become practically nothing.

In the picture used as a frontispiece the fellow in the foreground is myself. The little tent is where the extracting is done. It is also my kitchen, parlor and bedroom while I "batch" it when caring for the bees. The picture shows only a portion of the bee-yard. I had eighty colonies in that yard when the picture was taken. Nearby is a small lake, where I go fishing and boating when time permits.

This season has been the flattest failure that we have had since I have kept bees. I have read of total failures, but this is the first I have ever experienced, and I have keep bees over fifteen years. I look with more than usual anxiety to the autumn flowers.

The hive fastenings described in the fore part of my article are somewhat objectionable, in that nails must be driven into the hives. This year I expect to make frames to hold several hives clamped together, without fastening the individual hives. A bottom frame, so constructed that it will hold the bottom beards in place and of proper length to fit crosswise in a railroad car, will have holes mortised in just below the corners of each hive. T-shaped posts, formed by nailing a ½ by 3-inch piece (top of the

T) to a $1\frac{1}{2}$ by $\frac{7}{8}$ piece (stem of T), length of post to be a little greater than height of hive, upper story and rim for screen, will be dropped down into these holes in such a manner that the stem of the T (the 78x 1/2 piece) will be between the sides of the adjacent hives, and the top of the T will catch over the ends of the hives, i, e, the corners of two adjacent hives will fit snugly into the corners of the T-shaped post. A light frame, having holes to correspond with the tops of these posts, will be placed on top of the group of hives and drawn down tight against the top of the screens by means of wire loops with sticks. These groups, or clamps, of hives will be placed on the wagon-rack crosswise; which will make the combs run lengthwise of the wagon. This will permit a greater number of hives on the rack one tier high. I would not expect any damage to the combs by being placed lengthwise on the wagon. When placed in a car they will be right. PERU, Ind., July 6, 1900.

mind of the second

H. H. HYDE.

ETTING GOOD QUEEN CELLS EVEN DURING A DEARTH OF HONEY. BY

During the last few years queen rearing has been my hobby, and one of the facts on which I have studied and experi-



mented most is the securing of large, well - fed cells: and I have succeeded in doing so even in a dearth. The method I use most, the one I use when honey is coming in, is as follows: I get a set of

combs of honey (no broad) and put them in a hive-body. One of these combs, which must be empty, I fill with water,

and set next to the wall. I put this set of combs over a bottom-board having an entrance at least 78 of an inch deep. Over this entrance is put wire cloth or a piece of tin filled full of nail holes. About 10 a. m. I go to a strong colony, find the queen and set her comb by the side of the hive. I then shake all the bees I can get, and not depopulate the hive too much onto the frames of honey. An oilcloth and cover is put on, and, if in hot weather, a shade-board also. About 4 p. m I graft my cells, usually 36 of them, using drone comb in preference to Doolittle cups. These are given to the cell-builders which will, with me, on an average, start 30 cells—often the entire lot. On the day I graft the cells I go to two strong colonies, place a queen excluder over each, and put two frames of unsealed brood in the top stories, so as to call up plenty of nurse bees. The next day, or 24 hours after the cells were started, I go and gently lift the frames containing the cells, allowing as many bees to adhere as will, and place one in each hive, above the excluder, and between the frames of brood, to have the cells built out; the cell-starters being returned to their own hive. This has never failed to give me fine cells when there was any honey coming in. The cell-starters, after being left for six hours queenless and broodless are ready for work when cells are given. By giving each cell a large supply of royal jelly, and starting them nicely, when everything is exceptionally favorable, I can use the Doolittle method strictly; but unless everything is favorable, I get better and larger cells by having them started by queenless bees.

I have another method which I use when there is a dearth, and it is almost impossible to get cells by any other method. Just before nightfall I go to a strong colony, remove a frame of brood with the queen and set it in an empty nucleus; the other combs containing brood are given to some other colonies to care for. By morning, the bees, being queenless and broodless, are ready for the

grafted cells, which I give, the number depending on condition. These cells are allowed to remain two days when they are again given to bees made queenless a few hours before; the queen and brood being returned to the hive from whence they came. Three days later I give thirty to fifty cells to one colony to care for until ready to hatch; the remaining colonies having their queens returned as before. While it is a great deal of trouble to rear cells this way it has never failed to give me as good queens as those raised under more favorable conditions. I fully tested this method last fail, rearing queens for six weeks under the most unfavorable conditions and my assistant apiarist complimented me this spring on the large size of the queens found in our nuclei; all being reared late by this last method.

As the cells must be taken care of on the tenth day, it will be in order to tell just how I do this. I use an introducing cage made as follows: a block of wood 1 inches long, 1 inch thick, and 112 inches wide, has a 112-inch hole bored in it 34 of an inch from one end. Wire cloth is tacked on each side over the hole, then a 13-inch hole is bored from each end of the block to connect with the large hole The short 12-inch hole is now bored with a 34-inch bit to within 18 of an inch of the large one, making a shoulder for the cell to rest on. To introduce, place the cell, point down, in the large hole. A piece of perforated metal is put over the end for protection, the other hole being previously filled with candy made of granulated sugar.

I very often allow the cells to hatch in a cell-nursery, and put the virgin queens in the introduction cages instead of putting in cells. Armed with these cages containing queen cells, or virgins, and a lot of mailing cages, I go to my nuclei, and, as I catch the queens, give one of the cages containing a cell or virgin queen; all being done at one and the same operation; it not being necessary to again open a nucleus until another queen

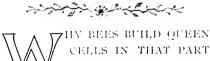
has begun laying and is ready to send off. One of the rules I have laid down is to never catch a queen from a nucleus unless I have a queen-cell or virgin to put in at once. If this rule is followed you will never have played-out nuclei. Another thing. I find it always pays to keep enough nuclei so that each queen can pretty well fill the combs with eggs before she is taken away. During the summer months, when we have a long slow flow, we very often give the fourth frame to our nuclei; and more, we extract honey from them; sometimes as much as 40 pounds on the average, or more, during the season.

This always leaves our nuclei strong and ready for winter. We always winter them just the same as full colonies.

With the best of management fertile workers will sometimes make their appearance; and, to dispose of them quickly and surely, I go to a nucleus having a laying queen, take the queen and one frame of brood and gently set them in the hive or nucleus containing the fertile workers. I have never lost a queen in this way; and, of course, the fertile workers at once disappear. I also use this method in introducing queens from one hive to another in the same yard; and it always works, unless there is a dearth of honey, or the colony is extra strong.

In no business are there so many ups and downs, and ifs and ands, as there are in queen rearing; and unless a man is patient, careful and methodical he better let queen rearing alone.

Hurro, Texas, April 17, 1900.



OF THE HIVE WHERE THE QUEEN CAN'T GO.

BY E. R. JONES.

Nature has provided that bees will construct queen cells when any one of the following conditions exist, viz.: failure

on the part of the queen to deposit as many eggs in such places as the coudition of the colony and the strength of the honey flow would indicate there should be, which leads the bees to believe that their queen is failing, and thus arouses the superseding impulse; a crowded condition of the hive, together with a honey flow, which makes the bees wish to expand their business, consequently the swarming impulse is brought about; or the sudden loss of the queen. is only nature's safety-valve to meet extreme emergencies; and it was intended by the Creator that queens should be reared under this last named condition only as a last resort.

There is no question in my mind regarding the superiority of queens reared under the superseding or swarming impulse. I am *surc* of it; and, as colonies can be regulated with more certainty, and worked more profitably, when rearing queens under the superseding impulse, I will confine myself for the present to telling how to bring about that impulse.

When the weather is warm, and honey is coming in to meet all daily demands, with a little to spare, I take a strong, twostory colony, preferably with an old queen, having six to ten frames of brood, most of which should be sealed, fill the lower story with brood, if the colony has not enough broad of its own, go to other colonies and draw frames of capped brood, see that the queen is in the lower story, and then put on a queen-excluding zinc, with the second story on top of that. Now put two frames of halching brood, and one frame containing eggs and young larvæ, in the middle of the second story (if the colony has not got it you will have to get this from other colonies), close the hive and let it remain three days. If honey is not coming in plentifully, a pint of warm syrup should be fed late every evening. I go to the hives the third or fourth day, and nearly always find queen cups started in the second story, and, judging from experience, I imagine the bees are reasoning and complaining something like this: "What can be the matter with mother queen? Here is this comb of young brood, with the last egg just hatched, yet she has not laid an egg in it for three days; and here are these combs of brood nearly all hatched out, and we have cleaned out the cells, but she has not laid in any of them. Plenty of honey coming in, and we are not crowded, either for breeding room or with honey. She must be failing, or she would not have stepped laying here."

I now go and stock fifteen or twenty cups with young brood from my best breeder, and place them on either side of the comb containing the young larvæ, in the second story, and, judging by the way the bees usually accept them, and complete the cells. I interpret their views like this: "That is just what I thought. Mother is failing, and has laid in these cell-cups and we will have to raise a queen to take her place. Here are more than we need, but that does not matter."

Now you may ask why would they not build queen cells on the young larvæ that were in the comb above the zinc? Simply because they were waiting for their supposed failing mother to lay in the queen cups, which she would do if she were failing, and there were any queen cups available. See? How identical it is with natural superseding.

I have observed closely for several years and have never seen, nor been able to persuade bees to construct, queen cells over worker brood while there were available queen cups in the brood-nest, and their accepted queen was at liberty in any part of the hive.

When queen cells are constructed naturally in any normal colony it requires the mutual consent of the bees and the queen. The first being on the part of the bees—party of the first part—caused by the conditions in the hive and the strength of the honey flow, when they (the bees) will construct queen cups; and second on the part of the queen when she will lay in the cups prepared by the bees; next, the bees carry out their part by

feeding the larvæ and completing the cells; and last the queen approves it, and, so, does not destroy them.

To get cells built in colonies other than those naturally preparing to supersede, or swarm, we create the impulse in the bees to supersede by placing a comb containing only eggs and just hatched larvæ between combs of hatching brood (which is the most natural place to expect a queen to lay) in the second story over a zinc where the queen can not get to it. The bees, not realizing that it is the zinc that prevents the queen from coming up there to lay, very naturally suspect that their queen is failing, and prepare the cups for her to lay in, which she always does do in case of natural superseding. But the queen is not failing and would not lay in the cups if she could get to them; so we perform the queen's part by budding some cell-cups with young larvæ, and place them between the combs of hatching brood, when the bees will complete their part by feeding the larvæ and completing the cells; and the queen (with an excluder between her and the cells doesn't do a thing but approve it.

But I hear considerable complaint that the bees will accept only a few cells over a laying queen and a zinc. Yes, and two vears ago I visited a young, vigorous, enthusiastic bee-keeper, who numbered his colonies by the hundred, and who had recently concluded to become a modern queen breeder, and I had been there but a short time when he said: "Jones, I want you to look at these four colonies and tell me what is the matter. I've been trying to get some cells built in upper stories, but they won't do a thing for me" He had already told me that they had got no honey for about a month. 'Have you been feeding them any?" "No," "Well, I don't have to look at them to tell one thing that is the matter." But I looked at them, and found only a fair force of bees with but very little brood; they were on the decline, both numerically and in stores. Would any experienced queen breeder expect such

colonies to start cells? I think not. I return to those who get a few cells accepted but not as many as they think there should be. Examine your colonies and see if you, too, are not expecting something unreasonable. If considerable honey is coming in, and your colonies are properly prepared, they will accept some cells, but the number will be in proportion to the number of nurse bees and the amount of brood to be fed. See to it that your cell-building colonies have a strong force of just hatched and hatching bees, and a small amount of unsealed brood at the time you give them the grafted cups, and your experience will be different from mine if you do not get a good catch. With a strong colony of Holy-Land bees I have taken sixty-three perfect cells from one setting of sixty-five cups; but I can not do that well with any other race.

The idea seems to be prevalent among some of our queen-breeders that the unsealed brood on either side of the cell cups is necessary to draw (?) the nurse bees. Mr. Pridgen once said something about cows and milk. Well, if I wanted lots of milk I would want lots of cows. but I would expect to get more milk if their calves were weaned than I would if the calves run at liberty with the cows. You catch? A little young brood and eggs between combs of hatching bees is very essential, because it is in just these combs where the bees expect the queen to lay; and the fact that she does not causes them to think she is failing, and the cell-cups with young larvae in them are essential, too, because they are the next thing that you will find in a colony when its queen is failing.

You can also bring about the impulse to supersede, and get cells built in single-story colonies, by using a zinc queen-excluding division-board; using one side as a brood-chamber with the queen in it, and the other side the same as a second story to get the cells built in.

Shall we prime the cups with royal jelly before furnishing them with larva?

It is only by carrying a thing to the extreme that we are enabled to fully realize and appreciate the thing itself. Six years ago, during the height of a good honey flow. I thought to rear some fine queens; and, acting on the principle that if a little was good, more would be better, I primed about fifty cups, each with a lump of royal jelly as large as a large pea, carefully placed a young larvæ in each, and gave them to four of my best colonies to complete. Two days after I looked in and was surprised to find that the food I had put in had most all been removed, and the cups were not drawn out as I had expected to find them. This set me to studying and observing, and the only reasonable conclusion that I could arrive at was that the food with which I had primed the cups was not the proper thing to feed young larval queens with; if it had been, the bees would not have removed it. Since then I have used both primed and unprimed cups every year, and watched closely the results, and the bees almost invariably remove all or nearly all of the jelly that I put in, except when I use a very small amount taken from natural cells the larvæ of which were not over thirty-six or fortyeight hours old; and I am not sure that they did not remove the most of that. In these last mentioned cells the amount of priming was so small that I could not miss it. Again, these primed cells did not have as much food deposited in them during the first thirty-six to forty-eight hours, nor were the cups drawn out as uniformly as were those used without priming other than that which was taken with the larvae at the time the transfer was made.

It is claimed by our leading queen breeders that both worker larvæ and that intended for queens are fed the same kind of food for the first two days, but I have not seen where any one has said that larval queens four or five days old were fed the same kind of food that they were when only one or fave days old, nor that the surplus food that was deposited dur-

ing the first two days did not undergo a chemical change in the next two or three days. The facts as I have observed them for six years furnish strong circumstantial evidence that the food given the fourth or fifth days is not the same as that given the first and second days, or, that the surplus that was deposited the first and second days did undergo a chemical change during the next three days, or I do not know about this, and would like to be enlightened. Who of us would think that a healthy infant taken from its mother's breast and fed on "blue-John" or buttermilk, or even sweet milk from the cow, would continue to be healthy without nature remonstrating against such violation of her laws.

The larvæ used for queen rearing should not be over twenty-four to forty-eight hours old, the younger the better, but it should be fed an abundance of food so that it can be transferred with and on its own bed of jelly without touching the transferring ladle or the bottom of the cell cup into which it is put. I am satisfied that right here is where many fail in getting cells accepted. The tiny larvæ is too delicate to survive after being roughly handled or besineared with its own food, as that obstructs the pores through which it breathes, and it smothers before the bees can clean it up and get its bed properly arranged in its new house. You must be able to pick up the larvæ properly at one and the first triat, so you can place it in a central position on its food supply, and that without turning it over or moving it. To do this right requires a good eve, the right kind of light, a ladle properly made and a good deal of of practice.

To get good larvæ for transferring, take a clean comb and place it in the middle of your breeder's brood-nest one to two days before you prepare your colony or colonies for cell building; then, when you prepare your cell-builders, put this comb between the combs of hatching brood in the upper story, and you will have a fine lot of brood just right for

transferring on the third or fourth day. The transferring ladle should be made of No, 12, steel wire, flattened at the end and shaped similar to an ear spoon, but not so large, and bent so it can be inserted in the cell at one side and slid across under the larvæ, and not scrape up the old cocoons. It should be about 5-64 or 3-32 of an inch in diameter.

With the management described in the forepart of this article I can persuade bees to build cells over any queen that has once developed her full egg-laying capacity, but with a young prolific queen I can get better results by putting the whole brood-nest into the second story, and driving the queen below on empty combs.

I have said nothing as to whether artificial or natural cell-cups should be used; I use both; but, until some one perfects a revolution in the modern plans of getting the larvæ in the queen-cups, I would advise using artificial cups. They are stronger and you can have them when you like, and as many as you like, and where you like.

But I have a hankering for something better than transferring larvæ. I can get plenty of cell-cups by using a few artificial ones, but the queen won't lay in them unless she is old and is willing to be superseded. I can't wait for that. Yes, I can get plenty of natural cell-cups built, and the queen will lay in them, too, but the next thing I've got a swarming scrape on my hands, and I don't stick much on that. Where is the queenbreeder who will overcome these dificulties and perfect a practical plan whereby I can, by certain manipulations, say to the colony having my best breeder, "I want some queens now and you must prepare the cells;" and to the queen "you must lay in these cell cups as soon as they are ready," and it cometh to pass. This queen breeder's mis) representative has been in my hat for two or three years, but I am not fully satisfied with any plan that he has presented to me vet.

MILANO, Texas, April 24, 1900.

ELGIAN HARES. SOME OF THE PROFITS THAT MAY BE EXPECTED IN THE BUSINESS. BY DR. BELA

COGSHALL.

Editor Bee-Keeper's Review:-I cheerfully respond to your request for a short article on this new and important American industry that is now sweeping over the country, and has assumed such gigantic proportions on the Pacific coast. After spending over four months in California during the winter and spring, visiting the most important rabbitries in Los Angeles, San Francisco, San Jose and Oakland, studying the business as it is carried on there, I made up my mind that it was a safe and profitable industry for anyone to embark in. It does not need a large bank account; but one can engage in the business with a modest sum, and by improving and adding to his stock from time to time can soon find he has a good bank account if he is careful and judicious in this business.

We should advise all who desire to start in the business to get the best foundation stock money will buy; for there is much more money to be made in high grade stock than poor or medium.

It may and does seem to some that it is folly to pay from \$200 to \$500 for a choice specimen of the Belgian hare, and yet fortunes are made in this way. Several such animals have proven veritable Klondikes for the owners. Take, for instance, "Lord Britain," one of the best ever imported, the owners assured me that he paid 15 per cent interest on \$30,000; or about \$5,000 a year. Were they foolish to pay \$500 for him? They were charging from \$50 to \$100 for his services when I was there. He has since been poisoned and died.

Thousands of people, including men, women and children, are engaged in the business in California, and yet it is not overdone, or losing in interest or profit. They have not, as yet, reached a meat basis, and when they do there is a good

profit even from this standpoint. The possibilities are not generally understood.

Let us look for a moment at the produce of one good doe. She will produce from four to six litters a year; say five, average 8 at a litter; this makes 40. Now, say that one-half of these are does. Four of the first litter will breed at six months of age, or twice during the year, making 64. Then the second litter will be old enough to breed once, making 32 more, or 136 in all, the product of one doe. The average weight will be 8 pounds. Is there any other food producing animal on earth that can and does multiply its own weight like this? The prices for meat is from 15 to 25 cents per pound, and can be produced at 1.6 of that price. However, far more money can be made for a few years in raising fancy imported and pedigreed stock. Take, for instance, this example: We now have an order for ten bred does for December delivery at \$20 each, or \$200. The does to produce these in six months will not cost us over \$75 to \$100. In two or three months more they will produce a like amount, and so on, and we have the original stock on hand and a lot of bucks that have not entered into the problem.

Belgian hare culture, compared with that of poultry, is considered much more interesting as well as profitable. They are easier cared for, require smaller runs, there are no vermin to fight, and but little disease if properly cared for. If every farmer would raise them, as they do chickens, for their own use and profit, they would never regret it. Bee-keepers certainly will do well to combine the Belgian hare with their bee industry for reasons well set forth in your June number by Prof. Cook.

Realizing that the industry was bound to sweep over the whole country, and that our section and state, as well as surrounding states, had not as yet been touched, we concluded to embark in the business and be a pioneer. So we had the Flint Belgian Hare Association organized, composed of five good business men, with brains and ample capital to make this the head center of the industry in this section of our great country. To this end we went to Los Angeles, the hub of the industry on the coast, procured the services of an expert breeder, who helped me select our foundation stock. I also had the assistance of the president of the Los Angeles Belgian Hare Association, and these gentlemen assure me that our stock is A No. 1; much better than the breeders there started with originally.

FLINT, Mich., July 11, 1910.



THE WESTERN BEE-KEEPER has been resuscitated and is being published by the Labor Publishing Company, at 2015 Twelfth street, Boulder, Colo. Who is the editor is not told.

BRACE COMBS are sometimes attached to the separators, and when the sections are taken out a piece of comb is pulled ont. To avoid this trouble, set the super up on end, look through the spaces, and if any brace-combs are seen, cut through them with a sharp, thin knife; giving the knife a sawing motion. This is another of those things that I supposed everybody knew, but Mr. J. T. Hairston writes as though it was quite a discovery to him, and, if so, it may be to some others.

MICHIGAN seems to be having a good honey flow this year. The western states, like Colorado and Arizona, and those that depend upon alfalfa, are having their usual crop. California is having a very small crop. New York not much. Missouri, Wisconsin and Minnesota are not getting much honey. Taking it all in all, the supply of white clover and basswood will be very light this year. I learn this from my own correspondence and from the reports in Gleanings.

HEATING the uncapping knife in hot water, to make it slip under the cappings more easily, is considered entirely useless by Mr. Dooittle. He says in the Progressive that he has tried the hot water plan only to lay it aside with disgust. A thin knife will not hold the heat much longer than when it touches the honey, while a heavy knife is too bungling. After he got hold of the Bingham uncapping knife he was perfectly happy, as it did its work without the use of any hot water so long as it was kept sharp. My experience to a T.

PREVENTING THE BITING OF CAPPINGS WHEN REMOVING SURPLUS.

Mr. Hairston of Indian Territory, writes me that he finds the bees more loth to leave the supers after the harvest is over than during the honey-flow. It is at this time, that is, after the harvest, that they are inclined to bite the cappings when disturbed. He says that he noticed that they did not bite cappings so long as there was unscaled honey for them to fill up on; taking a hint from this, he pours a little extracted honey on the escapeboard, near the escape, when putting the board in place, and in this way he entirely prevents the biting of cappings. Another thing: for some reason the bees leave the super more readily when the honey is used.

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PHOTOGRAPHS WANTED.

Inquires still come in asking if my offer of \$5.00 for a photograph to use as a frontispiece is still open. Yes, it will be held open until further notice. For any photograph that I think well enough of to use as a frontispiece I will pay \$5.00 cash; and for any other that I think well enough of to use in the body of the Review I will send the Review one year and a queen of the Superior Stock. Let the photographs be as large as possible, sharp and clear (lack of this is the greatest fault) and, when possible, have them

printed on some kind of glossy paper. The mat surface papers, like the Aristo-Platino, are beautiful to use in making photographs that are simply to be looked at, but for the purposes of reproduction, the glossy surface gives much better detail.

HUNTING FOR A QUEEN is peculiar work. Rambler in Gleanings brings out one of those little points that I presume many of us have thought of, but never put into words. In looking for a queen, look for her and for nothing else, Everything but the queen should be a blank. Mentally, hold her picture in the mind's eye. If we look at the workers and the drones, and "wonder if that is foul brood," we are not very likely to see the queen A woman in Pennsylvania says that it is always the "long hind legs" of a virgin queen that she sees first when looking for queens of that class. to think of it, I believe that is usually the case.

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INTRODUCING QUEENS.

The best possible plan for an expert may be a very poor one for a novice. To illustrate: I have for the past two years guaranteed the safe introduction of the queens that I have sold. Last year I advised the caging of the queen against the side of a comb of hatching brood. There were some failures; mostly, I believe, through lack of thoroughness in detailsthe management was such that the bees burrowed under the cage and released the queen too soon. This year I am advising purchasers to let the bees release the queen by eating out the candy from the end of the shipping cage; taking the extra precaution to have all of the brood removed from the colony until the queen begins laying. The failures are very few, in leed. I think, however, that the only really infallible method is to release the queen upon combs of hatching brood, with no bees present except the young bees that hatch from the combs.

MEASURING BEES' TONGUES is a subject that is being stirred up by Gleanings. J. M. Rankin of our Agricultural College is working at it. He finds the tongues of the Italians much longer than those of the blacks. E. R. Root has been measuring the tongues of bees sent him by different breeders, and he finds little difference-about 15-100 of an inch seems to be the average. If the bees could work on red clover it would often be of advantage, and Prof. Green of the Ohio experiment station, suggests going to work upon the other end of the problem -shortening the length of the tubes of the clover blossoms. He would do this by selection. I believe Hasty tried something in this line years ago, but the tendency of the plant to revert to its old habit was too discouraging. Such changes as these require years to make them permanent.

SOME POINTS IN PEDDLING HONEY, .

Mr. J. C. Stewart of Hopkins, Mo., has had quite a little experience in peddling honey. In a letter to me he gives a few interesting points; some of which are as follows:

When he goes to a town he goes prepared to stay two weeks, if necessary; taking along a change of clothing. Instead of stopping at a hotel, he hunts up some boarding house where he can get board at about \$3.00 a week, and pay for the same in honey. In canvassing for orders he offers his prospective customer a taste of honey. If there is any hesitancy in getting a spoon, he takes a square of paper from a pad that he carries, and pours a small quantity upon the square of paper. He also carries a damp cloth in his pocket to clean the jar if it becomes sticky. If they begin to talk about adulteration and imitation honey, he draws from his pocket a photograph of his apiary, showing himself in the yard, which seems to create an impression that he must be a "sure enough" bee man. In taking orders he writes down

simply the street and number, not bothering to get names. He canvasses two days, and then delivers. Before starting out to deliver he takes a piece of pasteboard and draws a map of the district in which he has to deliver, marking out the streets and numbers where he has to call and the amounts to deliver, thus being able to lay out a route to the best advantage.

LITTLE SIDE-DISHES AT THE CONVENTION.

The Chicago convention will soon be here. The rates will be the lowest the location is in the heart of the best beekeeping region of this country. There is always a crowd at Chicago. A friend of mine living out in California, Mr. E. M. Cole, writes to me in regard to what he considers a very important part of the convention, although it is not always so regarded. He says that our bee journals are filled with most excellent matter, but they don't always make clear every little point that may be essential to success. At the convention we meet face to face, and three words sometimes clears up a point that the printed page leaves in obscurity. We also meet the man who doesn't write for publication. Perhaps he will not even talk in public; but in the quiet chat at meal time, or in the evening stroll, if you are a little skilled in drawing a man out, he will let the light into many a dark place and smooth many a rough spot in your path.

THE COMING CHICAGO CONVENTION.

I would like to remind the readers of the Review that the next convention of the National Bee-Keeper's Association will be held in Chicago, Ill., on the 28th, 29th and 30th of August next, commencing on Tuesday evening, the 28th.

The sessions will be held in Wellington Hall, No. 70 North Clark street, about a block and a half from the American Bee Journal office, and five blocks directly north of the court house. The hotel at which delegates may secure lodging, etc., is the Revere House, on the south-east corner of Clark and Michigan streets. only half a block from the hall. Rates of lodging will be 50 cents per night, and the proprietor of the hotel has assured Mr. York that good beds will be furnished, but that several will have to occupy the same room; and, although this hotel may not accomodate all the bee-keepers, the proprietor will do his best to see that it does. Each one should secure a lodging place as soon as possible after reaching the city.

The program for the convention will probably consist of one paper each session, and the balance of the time will be occupied in the asking, answering and discussion of questions. The papers will be by such well-known writers as Dr. Howard, of Texas; Thos. W. Cowan, of London, England; Mrs. Acklin, of Minn.; A. F. Moore, of Ill.; R. C. Akin of Colo.; and S. A. Niver, of N. V., and the question box will be in charge of such veterans as Hon, R. L. Taylor, of Michigan; D. W. Heise, of Ontario, Can.; Geo. W. York, Dr. Miller and C. P. Dadant, of Ill.; O. O. Poppleton, of Florida; and Rev. E. T. Abbott, of Mo.

I have not yet been able to learn what the rail rates will be, but as the convention is to be held on the same week as the G. A. R. encampment, it is probable that the rates will be the same as usual; one and one-third fare for the round trip from some localities, one fare from other localities, and 1 cent per mile each way in the Central Passenger Association territory. The rates may be learned at any railroad station as soon as the agents get their instructions.

A. B. MASON,

Secretary.

P. S.—It is possible that our friend, Geo. W. York, of 118 Michigan street, will be willing to secure lodging places for those who may desire it, if they will write him AT LEAST A MONTH before the convention, enclosing not LESS than Two stamps for reply. This did not occur to me in time to consult with Bro. York about the matter, and I may be getting myself into trouble, but I'll run the risk for the sake of the delegates; but DON'T FORGET THE STAMPS if you want to keep out of trouble yourself.

THE INFLUENCE OF LOCALITY.

This matter of locality and the part that it plays in bee-keeping is really becoming a chestnut; but it needs cracking just the same. Anything in the nature of a paradox, or that appears mysterious, is at once charged up to locality. In many instances the inference is correct. illustrate: Holy Land bees are not liked here at the North. They are great breeders. So long as there is honey in the hive they will keep on rearing brood. We don't wish any such characteristics here in the North. When the harvest is over we wish breeding to stop. We don't care to rear a horde of useless consumers. In the South, in Cuba, for instance, the harvest comes in the winter, or what corresponds to our winter, and it is very desirable that the colonies shall be populous at that season of the year. To accomplish this, Holy Land bees exactly fill the bill. Thus you see, in one locality one strain of bees is desirable, but another is not. In some other locality the conditions are reversed. Again, here at the North, where our main harvest comes early and is of short duration, small brood-nests are desirable. In the South, or where the harvest is prolonged through the whole summer, large brood-nests find favor. Then there is the wintering problem that is ever with us here at the North. In the South, chaff hives, and bee-cellars, and the like, are of no interest whatever. California and Colorado have conditions and sources of honey-flow that are entirely different from those of Michigan and Canada. The fundamental principles of bee-keeping are ever the same, but localities differ; they differ so much that a bee-keeper going from Michigan

to Cuba, or to Texas, and attempting to carry on bee-keeping as he has done at his old home, would be sadly left.

In reading our bee journals, and attempting to profit by the advice they contain, we should ever have in mind this matter of locality. The experience, and views and advice of Mr. Doolittle may be all right for New York, and Ontario and Michigan, and some of it may be all right for Florida or California, but not all of it.

Then there is another point: the more thoroughly a man understands his own locality, the greater his chances for success. He must know at exactly what time in the season to look for the different honey-flows. It may seem incredible, but I have had bee-keepers come to me to buy sections, come in great haste and a heart filled with enthusiasm, the bees were "just piling in the honey," and the owners had only discovered it. and the basswood honey harvest was coming to a ctose. These men did not even know where the honey was coming from. Of course, this is an extreme case, but not so very extreme as some of you may think. A man ought to know what strain of bees to keep, what size and kind hive and fixtures to use, when to take his bees from the cellar, if he winters them in the cellar, whether to protect them on the summer stands when he takes them out. and, if so, in what manner, whether to feed in the spring, whether to unite before the harvest, whether to shade his hives and how, when to put on the sections, and so on through the whole season, he should know, as nearly as it is possible for him to learn, exactly what is best adapted to his particular locality. In reading articles in the bee journals he should always ask himself: "Does this apply to my locality?"

To the one who will send me the best article on this subject, between now and September 1st, I will send \$5.00 in cash. To the writer of any article, not the prize article, that I think well enough of to publish, I will send a queen of the Superior Stock and the Review for one year.

SIZE OF FRAMES AND HIVES FOR EXTRACTING HONEY.

There is no subject concerning bees upon which so much has been written as about hives. The great diversity of opinions makes it a dangerous topic; nevertheless, I am going to lay before my readers some brief opinions of a few experienced bee - keepers. How they came to express these opinions came about in this way: Mr. Aaron Snyder, of Kingston, N. Y., wrote last spring to several bee-keepers, asking if they were starting entirely new in the business, and going to run the bees entirely for extracted honey, what size frame and size hive they would choose. He asked for views concerning the Draper "barns." He has sent some of the replies to me and I make the following extracts:—

Would use the Draper barns.
F. A. SALISBURY.

Ten-frame Langstroth, and then tier-up.
G. M. DOOLITTLE.

I would use the Heddon hive. I don't take any stock in the Draper barns.

W. Z. HUTCHINSON.

FARWELL, Mich., April 17, 1900. Alaron Snyder, Kingston, N. Y.:

Dear Sir—In order not to lose money, one must not exchange fixtures much. One hive is as good as another for extracting. All that is necessary is to pile them up as fast as they need more room.

Respectfully,

T. F. BINGHAM,

HAMILTON, Ill., April 6, 1900. Aaron Snyder, Kingston, N. Y.:

DEAR SIR—Replying to your inquiry, if I were to begin over again, I would use a hive with a frame exactly the size of that in the Draper barn. This hive is originally known as the Dadant-Blatt hive and is much in vogue in Switzerland.

We don't like the Draper barn itself because the cap and cover are fitted on in the same way as the dovetailed hive. We prefer a telescoping cap, which makes a more expensive hive, but a very much better linve, for all purposes, as usage does not give it a chance to gap open and give passage to robbers.

Yours respectfully, CHAS. DADANT. STARKVILLE, N. Y. April 4, 1900. Aaron Snyder, Kingston, N. Y.:

FRIEND SNYDER-Your favor of vesterday came to-night. In reply will say that I am well suited with our frame. 17 x 1134 outside. Were I to change it, I should make it shorter. We use seven to eight frames. Seven to winter on. For extracting we use mostly frames about 8 inches deep, to set on top and tier up. We use a zinc excluder, and drive the bees down with smoke, removing the entire story. Were I to change I would make the frame shallower. We formerly used barns-barn-roof and all. We could draw eleven or twelve of them on a twohorse load. Now we draw three times as many with the same size brood-nest.

Yours truly, P. H. ELWOOD.

LAPEER, Mich., April 7, 1900. Aaron Snyder, Kingston, N. Y.:

FRIEND SNYDER-Yours of the 4th inst., asking what sort of hive and frame I would choose for extracting only, is received. In my view, for extracted honey, the size of the hive and frame is not very important - the smaller the hive, generally speaking, the larger will be the number required to stock the field. I should not in any case want a hive so large that, as a rule, more honey would be stored in the brood-chamber than I desired there for wintering. For this reason, in this locality, the Draper is too large. If the hives were to be handled much I should want closed end frames. If compelled to choose at once, my first choice would be the Heddon; second, 10-frame Langstroth.

Very respectfully yours R. L. TAYLOR.

Loveland, Colo., April 23, 1900. Aaron Snyder, Kingston, N. Y.:

FRIEND SNYDER - 1 am afraid I cannot answer positively your inquiry. I thirk I would adopt a shallow, divisible brood-chamber hive my own invention of course, but somewhat different from the Heddon. Could tell you more about it if you were enough interested. What I would adopt would depend somewhat on circumstances - whether I wanted to practice some peculiar system, make my own hives, or depend on the factory. I succeed well with the divisible chamber, but it requires a different management from others. Am using 8, 9 and 10 Lframe hives, also the American hive, and the American made into a divisible shallow chamber, two sections of the shallow

equaling one regular full depth American. Most of the extracting is from the American hives (both full and half depth brood frames), extracting only from the full depth and using the shallow ones for brood, and while this is not a suitable hive for comb it is very good for extract-The deep brood chamber, either sectional or deep frame, is a good wintering and brooding hive, I think a little better than the L-frame. I should consider the "barn" a good wintering and brooding hive but too cumbersome, but I have not tried it. 1 lean toward the shallow frames for both brood and extracting, but it is but fair to say I have not tried the shallow extracting frame, and while the sectional hive is my choice for brood I might not like such for extracting. The "barn" frame is too big to handle in the Respectfully, R. C. AIKIN. extractor.

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THE TREATMENT OF NEW BEE

JOURNALS.

The death of a bee journal a few months ago has been followed by a variety of comments in some of the other journals. Some of these criticisms have been written in a spirit that seemeth to say: "It's good enough for you. You ought to have known better than to have started a bee journal." Other journals have condemned this style of comment. My own opinion is that the death of a bee journal furnishes a fitting opportunity for pointing out the folly of embarking in such an enterprise, but it should be done in a kindly manner.

There certainly is no need of any more bee journals. The field is well covered; perhaps overstocked. If I should sell the Review to day, the last thing that I would think of doing would be that of starting another bee journal; and I certainly would be in a better position to make a success of it than would some man who had had no experience in that line. If Bro. York should sell the American Bee Journal, I doubt if he would ever think of such a thing as starting another bee journal. I doubt if there is a publisher of a bee journal in this country who would not find it well nigh impossi-

ble, even with his present capital and experience, to start in and build up a new journal. If this be true, what can a novice expect? The birth, growth and prosperity of existing journals have resulted from a peculiarly appropriate combination of men, time and circumstances. A successful bee-keeping editor must possess several characteristics. To understand bee-keeping alone will not suffice. Even a college education may not make of a man a good school teacher. In the making of an editor there must be editorial instinct. To this on the be joined a knowledge of printing and some taste in typography. This last is not so important, as good printers can be hired. I have, however, known of a bee journal. being started because the owners of some job office thought they could print it so cheaply! It is much easier to learn the printer's trade than it is to learn beekeeping.

I think that in justice to ourselves, and to those who may be thinking of starting a bee journal, it should be made known that at present there is really no demand for another bee journal; that to establish one would require an outlay of time, energy, skill and capital that, if invested in some other business, would bring far greater returns.

Having said all this, it must be admitted that this is a free country. If a man believes that he can make a success of bee journalism, he has a perfect right to put his time, talents and money into that business. We ought not to encourage him to start; but, if he will do it, there is a certain a nount of courtesy due him as a brother publisher. I know of an exeditor of a bee journal who would not allow even the name of a new rival to appear in his journal. We need not exchange advertising space with a new journal unless we believe it to be to our advantage to do so; there is no call for us to pat the new editor on the back and urge him on to spend his last dollar in what we believe to be a losing venture. but the courtesies extended to a journal ought not to be proportioned according to its age or prosperity. No one ever tost anything by being polite, or even kind, to the new journal; and sometimes the new journal succeeds in spite of predictions to the contrary, and then the past favors become as bread cast upon the waters. The old, established journals can afford to be magnanimous in this matter. It creates a much better impression even among their own readers than does a course that savors of jealousy and selfishness. Don't encourage them to start; but, if they do enter the ranks, their position entitles them to our editorial courtesy.

EXTRACTED.

DR. MILLER'S "GOBACKS."

Supposing That Everybody Knows What We Know.

I supposed that everybody, or almost everybody, took off the supers of comb honey as soon as nearly all of the sections were completed, sorted them over, putting the unfinished sections into an empty super until it was full, and then placed it on a hive for the bees to complete the sections. I have written about this, although I have never placed any special stress upon it, as I supposed it to be a general practice. The following extract from an article in Gleanings shows how this plan struck even so well informed a man as Editor Root. He says:

While I was visiting Dr. C. C. Miller at his home, he and his sister Emma quite incidentally made reference to their "goback" colonies and "goback sections." Said I, with eyes staring wide open, "I should like to know what newfangled thing you are referring to." "Gobacks," said the doctor; "haven't

"Gobacks," said the doctor; "haven't I ever told about them in the journal?"

"You have not," I said—"at least I do not remember seeing any reference to them."

It seems that, in taking off their combs of honey, they remove the supers when most of the sections are completed. These are taken to the house, and the filled sections are set to one side to be scraped and cased; but the unfinished ones "go back" into the same or another super. There may be one or perhaps a hundred or so of supers with partly filled sections, and these are all designated as "gobacks." They are either placed on top of other supers that are being built out from foundation, or upon colonies that seem to show a special aptitude for finishing up "gobacks."

In looking over Dr. Miller's hive record book I found there were certain colonies that had produced so many filled sections and finished up so many "gobacks." These "gobacks" are are all placed on the hives before the honey-flow ceases; so when the season is over, Dr. Miller has nothing but No. I filled sections without any unfinished cues, or practically none, to be extracted, to be sold for less money, or to be filled out after the honey-flow by feeding back—a wasteful, laborious, and disagreeable job, because all has to be done during the robbing season.

Of course, there is nothing particularly new about placing unfinished sections on the hives, to be filled out; but, if I mistake not, the general practice is to place such sections on the colonies after the

honey-flow.

Another interesting fact to me was that some colonics are much better for finishing "gobacks" than for filling sections from the foundation—that is to say, when work is apparently started or almost finished, those colonies show a special aptitude for completing work, but they are not so much inclined to start on raw foundation as some other colonies in the yard.

It seems that the Miller family has a way of finding out the peculiarities of each colony, and those peculiarities are recorded in the record-book; and if the queen is still in the hive next year, that queen and her bees are devoted to a special kind of work—it may be to filling out "gobacks," to running for extracted honey, if the honey is travel-stained, water-soaked, or discolored, or to producing comb honey from foundation at the start. The colony that is good both at producing honey and finishing "gobacks" is given light work, and its queen is used for a breeder.

Queer, is it not? that a prolific writer like Dr. Miller should not have told us about his "gobacks;" and yet I suspect this matter is like a good many of the other hundred and one tricks of the trade that he knows, and supposes we all know.

The word "goback" is suggestive, and worth coining, and you may be sure it will be used in the forthcoming edition of our A B C book.

This plan of the doctor's is one that I have always practiced, and it certainly greatly lessens the number of unfinished sections that will be left at the end of This is one of those cases that illustrate so well the fact that we are inclined to suppose everybody knows what we have known and practiced for years. We feel that it isn't worth telling, because it would be no news. This shows that it is a good thing for even editors to travel about the country and visit beekeepers. Not only will they find new things that the bee-keeper supposed were old, but things always strike a stranger differently than they do a man who has been acquainted with them all of his life. The stranger takes a different view of things. He sees them in a different light that may bring out valuable points that had been unnoticed by the owner.

I cannot close without saying a word or two in regard to characteristics of different colonies. It is exactly as the Miller family has found it. Some colonies are excellent honey gatherers, but poor comb builders. Some build lots of burr combs. Some cap their honey poorly. Some are excellent comb builders, but may not be very good at gathering honey. I work exactly as the doctor does; that is, I note down on the hive cover, or back of the hive, each peculiarity as it is discovered. I soon learn that there are some colonies upon which it is worse than useless to put on any "gobacks," Then there are others that seem to be peculiarly adapted to just this kind of work.

COMB FOUNDATION.

The Thickness of its Different Parts, and the Influence Upon the Finished Comb.

Prof. C. P. Gillette, of the Colorado Agricultural College, has made what is probably one of the most extensive and scientific series of experiments to prove how bees utilize and manage the wax that is furnished them in comb foundation; and he has published a bulletin of 28 pages in which these experiments are described, illustrated and explained by means of numerous tables, cuts, etc.

Very few people will take the time to wade through these tables in an attempt to learn the lesson they are supposed to unfold, and, for this reason, Prof. Gillette has done a very sensible thing: in the back part of the pamphlet he has devoted nearly two pages to a "Summary of the More Important Conclusions;" which I take great pleasure in copying. They are as follows:—

Bees use freely the wax in foundation to extend both the midrib and the cell walls of honey comb.

The heavier the foundation used, the heavier, as a rule, will be the comb built

upon it.

If the midrib of a foundation is much lighter than that of natural comb, the bees are likely to strengthen it by adding way to the bottom of the cells.

If the midrib of the foundation is thicker than the midrib of natural comb, it will result in a comb with a midrib thicker than the natural. Or, to state it differently, the bees will not thin the midrib of a foundation down to the thickness of worker comb built in the natural way.

Midribs of foundation that are not more than .17 of a millimeter (.007 inch) in thickness, are thinned little or none by the bees.

Drone comb has a thicker midrib and heavier cell walls than worker comb.

A foundation with a heavy midrib and very slight cell walls, will still produce a comb with heavy cell walls.

Very high cell walls in foundation are not cut down to the thinness of cell walls in natural comb.

The thin and extra thin and the "1899" deep-cell foundations produce a comb that approximates very closely the lightness of that which is naturally made by the bees.

When heavy foundations are used, the extra weight of the comb built upon them is due more to the extra weight of the cell walls than to the heavier midrib.

When very light foundations are used, the somewhat heavier comb is due almost

entirely to the midrib being heavier than that of natural comb.

When foundations containing an abundance of wax to build the entire comb are used, the bees still add much more wax, sometimes nearly enough to build the comb without the help of the wax in the foundation.

Wax seems to be given with the best economy when the midrib of the foundation is of the thickness of the midrib of natural comb, and when there is a small, or at most a moderate, amount of wax in the cell walls.

Poorly attached combs in sections seem to be more the result of weak colonies and poor honey-flow than to the kind of starter that is used; though large starters and strips of foundation in the bottom of the sections do help to strengthen the union of comb to the section.

Separators between the sections are essential to the best results in producing

comb honey.

The thicker the comb, whether natural or artificial, the greater the proportion of honey to wax in it.

In natural worker comb, one inch thick, the proportion of wax to honey is between 1 to 20 and 1 to 25 by weight.

ROBBER BEES.

It is Well to Avoid Trouble, but Danger from Robbers is often Exaggerated.

The management of bees during a time when they will rob is something that calls for experience and good judgment. It is very unpleasant to have the bees so educated that they will follow the beekeeper about, ready to pounce into a hive the moment it is opened. On the other hand, a bee-keeper ought not to believe that he cannot open a hive at a time when bees will rob. Eor excellent advice on this subject I have seen nothing better than the following article by C. Davenport, in the American Bee Journal:

In the long ago, when I was young in years, and in bee-keeping also, I spent considerable time in anxiously watching hives when young bees were rushing in and out during their exercise or playspell, wondering if it was not a case of robbing. The subject of robbing was in those days a sort of nightmare affair with

me, and I was always dreading and expecting a desperate case of it to commence, and when finally two or three weak, and what I now know to have been queenless colonies, were cleaned out by robbers, I thought I had at last discovered the cause that might prevent me acquiring great wealth with bees, and that it must be this same cause which had prevented old, experienced bee-keepers from becoming rich, for, in those palmy days of youth, it seemed to me that, barring some great unforseen calamities of this kind, it would be an easy matter to make a great amount of money with bees, besides fully enjoying all those things which we would not sell for money if we could. But if whole colonies were to be wiped out by robbers in such a short time that I hardly knew anything about it until the whole affair was over, it changed the appearance of the prospects.

Now, I do not suppose there are any at present who hold such exaggerated views in regard to our pursuit, or who dread robbing as I did in those days, but possibly some who have not been long engaged in our fascinating, if not wealthacquiring, pursuit may be interested in what I shall say on the subject of robbing, for I remember how eagerly I then read everything I could find regarding it. This was considerable, but it seemed to me the writers treated the matter in an awed, scared way, giving warnings not to do anything to incite it, vaguely hinting at the great danger a bad case entailed. Brief accounts of how bands of frenzied robber-bees had attacked and killed almost all kinds of domestic animals, and in one or two cases they had sacrificed human life itself to their blind, unreasoning rage; and what dismaved me the most, was what was said about the colonies in large vards robbing and fighting until the greater part were destroyed. The subject was not an assuring one as then treated, most particular caution being given not to throw a drop of honey or anything sweet where the bees would have access to it during a time of scarcity, or when no honey was coming in.

Two years ago last fall, at a time when not a drop of honey was to be had in the fields, and as the general expression would be, "bees were just crazy to rob," while shoveling honey out of the cellar one day. I smiled grimly as I thought of this warning, for there were nearly 200 colonies within a few rods. "Shoveling honey out of the cellar" causes a gasp of amazement to a young lady leaning over my shoulder, then follows such a volley of questions that I retreat across the way

to my bachelor den, where I am safe from interruptions of this kind. But perhaps I should explain that this honey was stored in a room over the cellar; it was in a large alcohol barrel, about 500 pounds of fine mixed clover and basswood. The barrel got to leaking, and before I knew it the honey was all in the cellar which had a dirt floor. I shoveled out three or four wagon loads of honey mixed, which the bees industriously worked over, and no trouble with robbing occurred; in fact, if I have any broken comb, sticky frames, or anything else that I want cleaned up, bees are allowed to do the work whether honey is coming in or not, and with me full colonies worth saving protect themselves from all robbers that ever mass together and attack them. and with no precaution taken except in some cases to contract the entrances; that is, after they have had their first cleansing flight in the spring. The only actual trouble and loss I have had on account of robbing has occurred when the hives were first set out in the spring, when the number of colonies wintered in cellar is so large they can not be, or if for any other reason they are not, all put out the same day, there is danger, under some conditions, of those set out first robbing the ones put out later.

Bees usually will not make much effort to defend their hive from attack until after they have had their first flight in the spring, and by the time this is over the robbers may be at work in some hives in such force that there is apparently but very little effort made afterwards to repel them.

An old idea, and one largely believed. is that after bees have concentrated in large numbers to secure any sweet that may have been exposed, or when a queenless colony has been overcome and cleaned out, the whole mass then, if nothing better offers, throw themselves upon some one colony, which even if a strong one may not be able to repel them. is entirely erroneous, and it is well that it is, for if they did make a determined attack en masse, half or more of the colonies in a yard might be destroyed in a short time, but the way they really do, after whatever they have been at work on is about gone, is to scatter or divide up and look for more. Single bees, and in a few cases I have seen about a dozen, attempt at nearly the same time to enter some hive with an unusually large entrance, or one which does not seem to be as well guarded as others; but if they get in at all they are soon dragged out again. Meanwhile, the whole yard may appear

to be getting in an uproar, great masses of bees may cluster on the top and around the sides of hives that are tiered up on some colonies, a great number of bees may be flying in and out of the hives which seem so strongly attacked, and many a novice might think the matter was beyond his control, and imagine ruin staring him in the face.

I have seen even old, experienced bee: keepers get excited, and spray and throw water on these hives on which robbers were clustered in a freuzied attack, but if a close observation is made it will be seen that these apparently frenzied bees take good care to keep out of the entrance. If one more venturesome than the rest does get in it is roughly handled. The bees flying in and out so lively are bees that belong to that hive, and they are ready to fight to the death if necessary

to defend their stores.

A colony of average strength, if in normal condition, will, before succumbing to robbers, make such a fight that it would always be remembered by one who witnessed it; and it is something I feel safe in saying, but very few have ever seen, after a whole yard has, as the novice would think, begun robbing, it is in reality only the colonies as a whole becoming waked up to the fact that something unusual is taking place, and they are flying around to find out what it is. Then a general call to repel boarders follows, and in a few days things quiet down, with no harm done.

Still, as a matter of fact, I think it much better to avoid as much as possible all disturbances of this kind in a vard, especially late in the fall, for it excites and worries large numbers of bees, and this may do harm by impairing their vitality to endure the long confinement of winter. But whenever I wish to handle a colony for any purpose, such as taking out or exchanging frames, I always do so without any regard whatever as to robbing, no matter whether a drop of honey is coming in or not. In some cases hundreds of robber-bees will get into the hives and on the combs of the colony being handled, but after the hive is closed up they are soon expelled and others prevented from entering. No precaution is taken except to contract the entrance more or less, depending upon the weather and strength of the colony. I do not advise others to do so, but I have practiced this for years with no bad results. With nuclei the case is different. I have reference to full colonies, though they may be pretty weak and still repel robbers if in normal condition.

In regard to robbing in the spring when bees are first put out, as before mentioned, there is an easy way to overcome this. Simply smoke the colonies already out enough so the bees will fill themselves with honey. It is very quickly and easily done, does not harm the bees, and no robbing will be attempted until the honey in their honeysacs has been put back in the combs, and they will be some time doing this, but it is only under exceptional conditions that robbing in the spring is likely to be What these conditions are I would be glad to explain for the benefit of the inexperienced, but I fear I have already gotten outside the space I am allowed in one article.

Southern Minnesota.

MORE NEW INVENTIONS.

Do we Need Them in the Management of Bees?

I believe I have said that we need not look for many more startling inventions in our business. The movable comb hive, the honey extractor, comb foundation, the bellows smoker and the section honey box were grand and important inventions. I don't wish to discourage invention, but I don't look for many more improvements as important as the ones I have mentioned. At the last meeting of the California bee-keepers Mr. J. H. Martin read a paper upon this subject, and from it I extract the following paragraphs:

Every bee-keeper recognizes that in order to get the most profit out of the bees, the business must be conducted upon a large scale. We have examples in many portions of the country where the owner of many apiaries and at least a thousand colonies of bees are the ones that are deriving the greatest profit from them, and the profit is increased according as they adopt short cuts in the labor and where hired help is dispensed with as far as possible.

While working our bees for extracted honey our present method of removing each frame separately and brushing the bees therefrom, and stirring them up to a high state of anger may be classed as a primitive and roundabout way of manage-

ment.

I will outline some work that is being done along this line with some degrees of success. In the first place a shallow super is required. If the cover is quietly removed from such a super and a cloth saturated with a solution of carbolic acid is spread over it the bees, having a dislike to the odor, will soon leave the super and it can be removed. Or a shallow super that is fitted with close end frames that can be held firmly in place can be rid of the bees by a peculiar method of shaking.

The Porter bee-escape has been recommended by some bee-keepers, but it is too slow in its operation, and on that account should be discarded for this par-

ticular purpose.

Then, when the exegencies of the time demand, we will have a machine for uncapping the honey. I have gone so far with some experiments in this line that I am quite sure that a machine can be constructed that will uncap six or eight combs in just a few seconds; or, in other words, you touch the button and the machine will do the rest.

When a bee-keeper can uncap a number of combs as quickly as he can one side of one comb there is a distinct gain in time, and a consequent reduction in

the cost of production.

An ordinary two-frame honey extractor will, when the combs are well filled with honey, enable us to extract ten pounds at one operation; and to double this amount the four-frame extractor has been introduced; but now we need in a large apiary, and to follow the lightning uncapping machine, an extractor that will enable us to extract 100 pounds at one operation, and nearly as rapidly as one man can extract ten pounds with a small machine. The labor then would in a great measure be with the care of the honey, getting it into cans and to market.

I also certainly expect that the automobile will play an important part in honey production. There is no bee-keeper who feels safe to drive a span of horses near a bee-ranch, except in the night, and we learn of the death of horses every year from the stings of angry bees. The automobile will enable the bee-keeper to approach, or pass directly through, the apiary with his load of appliances and honey at any seasonable hour; and, as I pointed out in a recent article in Gleanings in Bee Culture, the automobile can be used for a variety of purposes in the apiary, running a saw, running the extractor or anything where light power is

Franklin's printing press was a crude affair but it answered the purpose when

Franklin was a printer, and the circulation of pipers was limited, but Franklin's press would make a sorry show beside the molern lightning press; but the beckeeper's interests are not so extensive, like the making of newspipers, and inventors will not give their time to the invention of appliances that will have but limited sile; but we may be quite sure that if the business had warranted it, such rapid manipulation as I have outlined would have been in use long ago.

When we further consider the subject of new inventions for the apiary and its management, we find that there is room for improvement in every line of our work. The smoker with which we subdue our bees is too large and cumbersome to operate with dispatch. In fact, with any of our bellows smokers quite a percentage of our time is spent in working the bellows. My ideal smoker would be not overlarge, and with it I would have a proper prepared fuel, and it should be self-operating: and so arranged that both hands of the bee-keeper can be used in the manipulation of the hive while the smoker is doing its part automatically.

We need new and fancy packages for small amounts of honey, something that can be sold on the street and on the lines

of transportation.

Such a package was sent to me some time ago and it worked like a charm. The honey could be eaten from it as it was held in the hand, but there was a strong objection to the material it was made from. It was made from the same material that forms the covering for smsages. Such material is all right when applied to sausages, but there is an evident unfitness of things when applied as a receptile for honey.

The foregoing improvements I think will occupy the attention of bee-keepers in the near future and greater than these will certainly be developed if the exegen-

cies of our industry demand.

NEW BOOKLETS.

The Chicago, Milwaukee & St. Paul Railway is issuing a series of booklets regarding points of interest along its lines, and if you are interested in the western country, or contemplating a trip, write Geo. H. Heafford, General Passenger Agent, Chicago, Ill., for the special publication desired, enclosing four cents in stamps for postage for each one.

No. 1. The Pioneer Limited.

No. 2. The Land of Bread and Butter,

No. 3. The Fox Lake Country.

Fishing in the Great North No. 4. Woods.

No. 5. The Lake Superior Country.

Cape Nome Gold Diggings. No. 6.

No. 8. Summer Days in the Lake Country.

No. 9. Summer Homes, 1900.

No. 11. The Game of Skat.

No. 12. Milwankee-The Convention City.

No. 13. A Farm in the Timber Coun-

No. 14. Stock Raising in the Sunshine State.

No. 15. Hunting and Fishing.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY. - All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells scaled except the row of cells next the wood.

No. 1.-All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells un-ealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1. dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission - the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

CHICAGO, Ill.-While small fruits are on the market so freely, the demand for comb honey is somewhat limited. However, fancy white will sell at 15; extracted, as to package and quality, from 7 to 8½.

S. T. FISH & CO., 189 So. Water St., Chicago, Ills. July 11.

KANSAS CITY.—Some shipments of new comb. No new extracted. We quote as follows; Fancy white, 15; No. 1 white, 14; fancy amber, 13¹2; No. 1 amber, 13; fancy dark, 12; beeswax, 22 to 25.

W. R. CROMWELL FRUIT & CIDER CO.,

Successors to C. C. CLEMONS CO. July 11. 423 Walnut St., Kansas City, Mo.

BUFFALO, N. V.-Too early to ship honey to Buffalo; too much fruit yet; wait till September, then and later can place it satisfactorily. We quote as follows: Fancy white, 14 to 15; No. I white, 13 to 14; fancy amber, 12 to 12½; No. 1 amber, 10 to 11; fancy dark, 0 to 10; No. 1 dark, 8 to 9; amber extracted, 11; dark extracted, 10; beeswax, 25 to 30.

BATTERSON & CO. July 10. 167 & 169 Scott St., Buffalo, N. Y.

NEW YORK .- Market rather bare of comb NEW YORK—Market father bare of combinency. New crop arriving from the south and selling fairly well. Extracted rather quiet, with sufficient supply. Beeswax in good demand and sufficient supply. Beeswax in good demand and sufficient supply. Beeswax in good demand and sufficient searce. We quote as follows: Fancy amber, rather scarce. We quote as follows: Fancy white, 14 to 15; No. 1 white 12 to 13; Iancy amber, 11 to 12; white, extracted, 6½ to 6¾; beeswax, 28 to 29½.

HILDRETH & SEGELKEN, 120 West Broadway, New York. July 11.

CHICAGO, H.L.-The new crop of comb honey is coming on the market, and while it is early sales are being made at the following prices, and white, 12 to 14; tancy amber, 11 to 12; No. 1 amber, 10; tancy dark, 9; No. 1 dark, 7 to 8; white extracted, 7 to 7½; amber, extracted, 6 to 6¾; dark, extracted, 5½ to 6; beeswax, 27 to 28.

R. A. BURNETT & Co., July 10. 163 So. Water St., Chicago, Ill.

NEW YORK. N. V.—There is a steady demand for all graces of comb honey. The receipts are not heavy. We quote as follows: Fancy white, 15 to 16; No. 1 white, 13\(^1\) to 14\(^1\)2; amber, 11 to 12 buckwheat, 9 to 11. Extracted honey is steady at the following prices: California white, 812 to 9; light amber, 8 to 8½; white clover, 8½; amber, 7½; We are asking, for extracted buckwheat, 6¾ to 7 cts. for kegs, and 7 for 7½ for tins, according to quality, but with very little trade. Florida extracted honey, 8 to 8½, hight amber, 7½ to 8; amber, 7 to 7½. Other grades of Southern at from 75 to 80 ets. per gallon, according to quality. Beeswax, a little more active at from 27 to 28 per

FRANCIS II. LEGGETT & CO. W. Broadway Franklin & Varick Sts, Jan, 11.

See the Points?

I have had 15 years' experience in producing honey and rearing queens, and I am breeding queens from a queen that I got last spring from J. F. McIntyre of Sespe, Cal. He describes this stock on page 12 of Gleanings for June 1, as filling the supers when other bees were starving. The drones in my yard are from excellent stock—such as that of J. P. Moore of Kentucky—I rear queens by the Doolittle plan, send them by return mail, and guarantee safe arrival, purity of mating, and satisfaction, at 50 cts each, in any quantity. Money refunded if queens are not satisfactory. Send for circular.

L. H. ROBEY, Worthington, W. Va.



puts the honey combs in the extractor, which is a

.. COWAN..

four-frame, reversible, with Ball Bearings and Lever Brake—in short, the

BEST EXTRACTOR ON THE MARKET."

Extract from article of N. E. France of Wisconsin, in June Review. No one is better qualified to judge the worth of an extractor than Mr. France. He says the ROOT COWAN is the BEST. Thousands of others say so.

THE A.I. ROOT CO., Medina, Ohio.

JOHN F. STRATTON'S

CELEBRATED



Birmingham Steel Strings

for Violin, Guitar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catlg

JOHN F. STRATTON, Importer, Manufacturer and Wholesale Dealer' 811,813,815,817 E. 9th St., N. Y.

Please mention the Review

-If you are going to-

RUY A RUZZ-SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

Queens, Nucl i and Colonies.

Best of Honey Gatherers.

Special prices to introduce during July, August and September. Untested queens, 50 cts each; \$5.50 per dozen. Tested, \$1.00 each. Nuclei, add 50 cts per frame to price of queens. Write your wants. Satisfaction guaranteed.

S. P. CULLEY, Higinsville, Mo.

Queens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

If You Wish Neat, Artistic



Have it Done at the Review.

M. H. Hunt & Son

Sell Root's Goods at wholesale and retail, at their prices. Our inducements are Strictly First-Class Goods, Cheap Freight Rates and Prompt Shipments. Our specialty Anything you want for your Bees. Send for our Catalog. Cash or trade for beeswax.

M. H. HUNT & SON, Bell Branch, Mich.

OUEENS THAT PAY

Are those from good stock, and reared right. I have reared over 1,200 queens from my "Doolittle" breeder, and tested over 100 in my own yard. The queens are large, and the bees are HUSTLERS—All queens warranted good ones; no culls sent out. Prices: average untested queen, 60 cts; dozen, \$6.00; select, \$0 cts; dozen, \$7.50; tested, \$1 00; select, \$1.50; extra, \$2 00. "You send me the best queens I ever had. J. W. Hartman, Pickens, W. Va." Others write in the same strain. See May Review, page 164. Circular free. 6-00-tf

J. B. CASE, Port Orange, Fla.

QUEEN CRANK

Occasionally has some second-class queens as to color of offspring that are first-class in every other tespect. That is, three-band bees predominating from golden mothers, and rather than palm them off as mutested, he sells them at socts each. When five-band bees predominate and do not exceed 80 per cent, they are worth \$1.00. From this up to 95 per cent, \$1.25. A higher grade but not uniformly marked, \$1.50, and breeders \$2.00 each. Untested, either three or five-band, 75 cts each, or three for \$2.00.

W. H. PRIDGEN,
(Money order office,
Warrenton, N. C.)

Warrenton, N. C.)

W. H. PRIDGEN,
Creek, Warren Co., N. C.

Exhibition Hives.

I shall probably make no more exhibitions of bees and honey at fairs. I have too many other irons in the fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them.

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new, but I would sell them at 15 cents each.

W. Z. Hutchinson, Flint, Mich.

\$10.00 REWARD!

To the party who sends me the most money for bees and queens between April 1 and November 1, 1900.

HIGH GRADE STOCK BY RETURN MAIL MY SPECIALTY.

One untested queen, 750; 6 for \$4,25; 12 for \$5.00. One tested queen, \$1,25; 6 for \$6.50; 12 for \$12.00. One 1-frame uncleus, \$1.00; 6 for \$6.50; 12 for \$10.00. One 1-frame nucleus and queen, \$1.50; 6 for \$4.00; 12 for \$17.00. Two, 3 and 4-frame nuclei, \$65 per frame to above prices for extra frames wanted.

For each dozen queens or nuclei ordered at above rates I will mail in August a Select Tested Queen.

ROOT'S GOODS

At Root's prices, plus carload rate of freight.

Bees, Honey and Beeswax Bought and Sold.

W. O. VICTOR,
Wharton, Texas.

Hutto, Tex., April 10, 1900.
T. F. Bingham,
Enclosed find \$1.75.
Please send me one brass smokeengine. I have one already. It is
the best smoker lever used.

Henry Schmidt

Wm Bamber,

Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possi-Making his own ble prices. foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money. time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted,

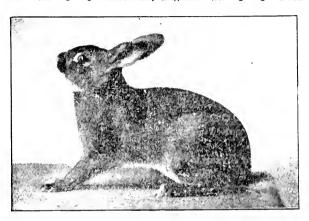
GUS DITTMER,
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PALACE GOLD IMPORTED APRIL 24, 1900, SCORE 9434.

If you want Fine Stock at reasonable prices give us your order. Write for July circular and latest price list.

I have several hundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight.

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the Review. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

1900 Queens 1900

For Business-Queens for Strong Colonies-Queens for large surplus. Competion in Quality, but not in price.

If you want queens, nuclei or supplies at bottom prices, send for my illustrated price list.

12-97-tr

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.



Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We al-

so carry a complete line of other supplies.
Catalog free. R. H. SCHMIDT & CO.,
9-99-tf. Sheboygan, Wis

Please mention the Review.

Selection.

Selection has been the chief factor in the developement and building up of our improved breeds of horses, cattle, sheep, swine, and poul-Men have devoted the best years of their life to a single line or branch of this work-and not without their reward. In bee-keeping but little has been done in this direction. The developement of a bright vellow bee has been the most noticeable thing that has been done in this line. This is the most easy of accomplishment, as results are so quickly and easily discernable, To breed for honey-gathering qualities is a much slower process. As soon as bees hatch out we can decide in regard to their color, and as to whether we wish to rear queens from their mother for the purpose of improving the color of our stock; to decide in regard to their working qualities requires months-perhaps years.

Every experienced bee-keeper must have noticed how much more surplus is stored by some stocks than by others. Time and time again, when visiting bee-keepers, have I been shown some particular colony, and heard the owner tell with pride how much honey it had scored year after year: always coming through the winter in good condition, or doing this or that that was so desirable. The strange thing is that bee-keepers so seldom seem to realize the value of such a colony or queen, as a starting-point from which to improve the stock of their whole apiary If they do realize it, they seldom take advantage of the knowledge. Suppose, by the introduction of improved stock, a man can increase his surplus, on the average, one year with another, ten pounds per colony, and that is not an extravagant estimate, on 100 colonies his surplus would be increased 1.0 to pounds. The cost for hives grounds, labor, wintering, etc., is nearly the same with one kind of stock as with another, just as it costs as much to keep a scrub cow as it does to keep a Jersey, and a gain in surplus that comes from improvement in stock is the most profitable that can be secured. To improve your stock, get the VERV BEST that you can for breeding purposes, and with this stock your apiary; then watch carefully, and breed from those colonies that do the best. Continue this year after year, and you will be surprised at the results.

This matter of beginning with as good stock as you can get, is all-important. Don't lose years of time by commencing with common or inferior stock. Get the best; and thus be able to commence right where some other breeder left off.

As explained in previous advertisements, 1 am selling queens from stock upon the development of which a good man has spent twenty years; making crosses, and then each year selecting the best to breed from. I have several times tried this strain, and know it to be the best that I have ever tried.

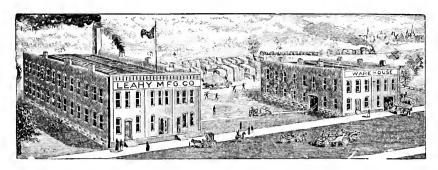
The price of these queens will be \$t 50 each. This may seem like a high price, but the man who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem to high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen SHOULD prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to each purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all: if, at any time within two years, a purchaser, for any reason WHAT-EVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and so cents extra sent to pay him for his trouble. It will be seen that the purchaser runs NO RISK WHATEVER. If a queen does not arrive in good condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurely mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is really superior.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price, and that is in connection with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review for 1900, can have a queen for \$1.00. That is, you can have the Review for 1900 and a queen for \$2.00. Of course, all arreatages previous to 1900 must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arreatages and to pay in advance to the end of next year.

W. Z. Hutchinson, Flint, Mich.

(P. S -For the first time, I am now able to fill orders for these queens by return mail.)

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bec-Keeper. Address

LEAHY Mfg. 60., East St. Louis, Ills. Omaha, Nebraska.

Gontraction

Of the brood-nest can be made very profitable if practiced in the right manner, with the right kind of hives and appliances, in the right locality and in the right time of the season. The reverse will prove true if mistakes are made. Your locality may be one in which contraction, if rightly managed, would put many dollars into your pocket. All of these points are fully explained in one of the chapters of ADVANCED BEE CULTURE. Besides this, the book contains 31 other chapters n e qually important subjects.

Price of the book, 50 cts.; the Review one year and twelve back numbers and the book for only \$1.25.

W. Z. HUTCHINSON,
Flint, Mich.

Honey FOR Extractor SALE

I have a nearly new, Van Allen & Williams Honey Extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed automatically—without stopping the machine. The regular price of this machine is \$20.00, but, as this has been used some, I will sell it for \$15.00. I would exchange it for bees, or anything else I could use.

н. Е. НІЦЦ,

Ft. Pierce, Fla.

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are alread of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free,

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

16-y W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, haying a very thin base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Sond for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

.

Still They Come!

What? Why, orders for Hyde's Su-perior Strain of Bees. We are rearing Golden Italians from our famous \$100 breeder, "Victoria." Among the points of superiority are gentleness, beauty and honey gathering. Queens are very prolific. Bees do not crowd the brood-nest with honey, swarm very little and enter the supers readily. We also have 3-banded queens from our fine breeders, "Jewell" and "Beauty." Stock is hardy, gentle and industrious. These bees keep rolling in the honey while other bees are doing nothing. Prices of either race, for the rest of the year, untested, 75 ets; 6 for \$1.25; Select, warranted, 25 ets extra. Tested, \$1.25. Holy Lands same price. Special discount on quantities. Circular free. We give FREE a Select Tested Queen for every \$10,00 and a fine Breeder for every \$25.00 worth of orders, at circular prices.

O. P. HYDE & SON, Hutto, Texas.

This is the original one-piece section-man who furnishes onepiece sections as follows:-

500 sections, \$1.88; 1,000 for \$3,25; 3,000 for \$8,90; 5,000 for \$13.00; 10,000 for \$22.60.

No, 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK,

Wisconsin. Watertown,

Listen! Take my advice and buy your bee supplies of August Weiss: he has



tons and tons of the very finest

MOTERONDOS

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered ere. Millions of Sections-polished on both sides. Satisfaction guaranteed on a full line of Supplies. Send for catalogue and be your own judge. AUG. WEISS, Wisconsin. Hortonville.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the foamer by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Violin for Sale.

I am advertising for the well known manufacturers of musical instruments, Juo. E. Stiation & Son. of New York, and taking my pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, how and case. The violin is a "Stradiuarius." Red, French finish, high polish, and real chony trimmings, price 344,90. The how is of the finest snakewood, chony frog, lined, inlaid (pearl lined dot) pearl lined slike, German silver shield, chony screwhead, German silver ferules, and pearl dot in the end, price \$2.50. The case is wood with carved top. varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an oven \$2.00. It is exactly the same kind of an outfit that my daughter has been using the pest year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some instruments here that cost several times as much. I wish to sell this on fit, and would accept our half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines, Iowa, manufacturer of and dealer in Apiarian Supplies, Send for circular. 1-96-6

Please montion the Review

I am advertising for B. F. Stratton & Sou, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

'00 CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive.

J. H. M. COOK. 62 Cortland St., N. Y. City

Make Your Own Hives.

Bee - Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

Machines on trial. Send for Catalogue.

W. F. & JNO. BARNES CO.,

34 Ruby St.,

Rockford, Ills.

1 00 Tt



With a view to extending the circulation of the Review, I make following special offer: For only \$3.50 I will send the Review for 1900, 12 back numbers, and 1,000 strictly first-class, one-piece sections. The Review and 2,000 sections, \$6.00; the Review and 3,000 sections, \$8.75; the Review and 5,000 sections, \$13.00.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

FOR SALE.

Apiary of 40 colonies of Golden Italians, in 10-frame Doolittle hives, together with fixtures. Everything

intures. Everything of 8-room, 2-story dwelling, barn and other outbuildings. Peach and pear trees, grapes, etc., in bearing. No disease. Healthy of mate Mild winters. No better locality to be had than this to those who desire to embark in the bee business. Average yield of surplus honey, 50 pounds to the colony. Photographs sent to those interested.

J. W. MINER, Ronda, N. C.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana, Only exclusive bee-supply house in Ind.

Please mention the Review.



GEO. W. COOK,

breeder of

Golden Italian Queens

and dealer in

Ap arian Supplies

of all kinds.

Golden Italian Queens, untested, from Dec. to July, 75 cts, each; six for \$4.50; or \$8.00 per doz. From July to Dec. 50 cts, each; six for \$2.75; or \$5.00 per doz. Tested queens, double the above prices. Breed-

GEO. W. COOK, Spring Hill, Kans.

MY GOLDEN AND LEATHER - COLORED

ing queens, \$3.00 and \$5.00 each.

Italian ueens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U.S., and have testimonials from satisfied customers in the U.S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 181, \$1.50 each. After June 181, tested queens, either strain, \$1.00 each; untested, 75 cts. each. One-frame nucleus with queen, \$1.50; two-frame, \$2.50; three-frame, \$3.25.

4-00-tf

J. W. MINER, Ronda, N. C.

GOLDEN ITALIAN QUEENS

Which give satisfaction are the kind that H. G. Quirin sends out. The A. I. Root Company tell us that our stock is extra fine. Give us a trial order for our

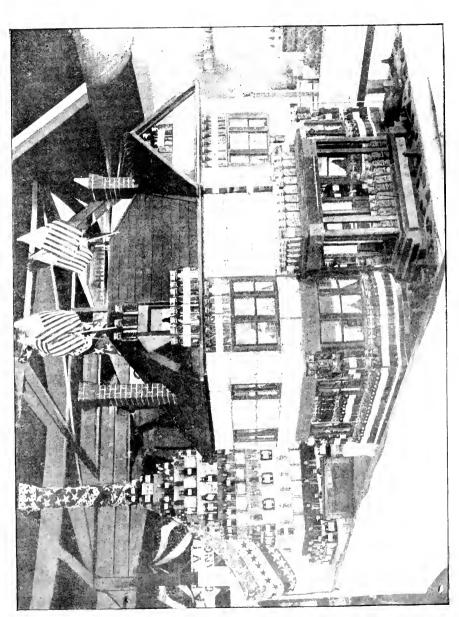
SELECTED STOCK,

and see how well we can please you. All queens sent PROMPTLY BY RETURN MAIL, with safe delivery guaranteed. Have bred queens for 12 years. Price of queens after June:

Ordinary, warranted, - 50 50 \$2.75 \$5.00 \$6.00 \$7.55 \$9.00 \$7.55 \$9.00 \$7.55 \$9.00 \$9.00 \$1.00 \$1.00 \$1.00 \$1.00 \$9.00 \$1.00 \$

Address all orders to

H. G. QUIRIN,
PARKERTOWN, ERIE CO., O.



APIARIAN EXHIBIT OF F. L. GRANT, AT THE LEWISTON, MAINE, FAIR.

The Bee-Keepers' Review

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor,

VOL XII, FLINT, MICHIGAN, AUGUST 10. 1900. NO.8.

NHIBITING BEES AND HONEY AT THE FAIRS.
7 BY F. L. GRANT.

In response to your request for an article on the exhibiting of bees and honey at the fairs 1 will give a brief account of my experience in that department of the business. The first, and by no means the least, as regards the work, is in getting ready; perhaps one has to lay awake nights to think of something new so as to get ahead of the other fellows. This is not easy work; it is rather trying to the nerves and sometimes discouraging; especially when we call to mind that it is likely that the other fellow is doing the same thing.

After we have decided what is to be the leading feature of our exhibit; then comes the "grind;" the working out of the details and getting them into shape so as to please the eye of the judges and visitors. This is very important; for our success in winning premiums, and the disposing of our crop of honey at good prices, are largely dependent upon this.

Whatever there is in the exhibit that is in the line of novelty should be so constructed that it can be put together in sections, to save time, which is very limited in the rush of setting up and taking down; especially the latter.

All wax-work should be as nearly in place as it is possible to box it. The roof of the honey house in the accompanying cut of my exhibit at the Maine State Fair of 1898 consists of beeswax shingles which were cut from sheets of brood foundation. They were glued to a very thin boarding on the roof, which, in this case, came apart in six sections. The boards were also covered with paper so as to make the wax adhere to them more firmly. The wax-work of the roof and otherparts were shipped with soft packing between them.

The windows were made whole, and were shipped in a separate box packed with great care. The walls of honey were supported by a frame work made from 13 x 13 joist fastened together with bolts and screws. The name, "Sweet Home," at the top, consists of beeswax letters suspended by silk thread. The distance from the table to the top of the flags was about seven feet, and the length of house about six feet.

As the picture shows many of the details of construction I will not say any more on that point, except that every part which does not show honey or glass, consists of wax-work. The table on which my exhibit was placed is 22 feet long. The pyramid at the further end is about eight feet high, and seven feet wide. This pyramid is nailed permanently in place so that it will be there ready for use every season; thereby saving much time in getting the honey in place.

That space in front of the pyramid, of which only a part can be seen, was taken up by a display of bees and implements. A part of the counter, from which the honey was sold, is shown just in front of the wax arrangements by the portico of the house.

After having got the leading feature of the exhibit packed and ready for shipment, the next move is the packing of the honey so that it will arrive at the grounds in good condition. This is of great importance. I know one man who shipped quite a quantity of it, and it was nearly all broken. I think the most successful method of shipping honey, unless in very large quantities, is to tie the comb honey in bundles, two cases with glass in a bundle. The ropes which cross the top case in the center serving as a convenient place for the hand in lifting.

With extracted honey, the cans or bottles should have folded paper packing between them, running each way. They should also have a heavier packing around the sides; and at the top and bottom there should be very heavy mats of the same material. In fact, the secret of successful packing is in having the jars fit perfectly tight. I have had a box containing 24 pint Mason jars filled with honey fall into the street from the top of my load without cracking a single can. I find that a box which will contain about forty pounds of honey in jars is the best package for shipping.

In shipping my honey I do not send it directly to the fair grounds; for the goods are so roughly handled at that point and the railroad company will not be responsible for damages. I have it shipped to the city, about two miles further on, where it is more carefully

handled. It is then conveyed by means of truck teams back to the grounds.

I manage, if possible, to arrive at the grounds two or three days before the fair commences; so as to have plenty of time in setting up the exhibit.

I always carry a cot bed with me so that I can camp down right beside my table. This makes it far less expensive for us than if we paid \$1,00 per night for lodging. During the day we keep our bedding under the tables; and, by the way, I think it is a very good plan to have as many boxes as possible of a size that will slide under the table easily, for then we are sure of having them when we get ready to repack the exhibits.

If an exhibitor is going to sell honey during the fair he should be particular to arrange the exhibit so that the leading feature shall be as near as possible to the counter from which sales are to be made; for there is where the visitors become interested, and interested visitors make good customers.

In conclusion I will say that any one who is intending to enter this department of the bee business should be prepared to meet the many disappointments which will arise and to take them as a matter of course.

FAIRFIELD CENTRE, Me., Aug. 4, 1900.



A

N EFFICIENT BEE ESCAPE FOR A HONEY HOUSE. BY L. S. LEONARD.

Fresh air, light, and a convenient passage for bees to escape, are essential requisites for a honey house; especially for the extracting room. The persistent efforts of bees to enter the honey house, and their alertness in discovering any hole, crack or crevice, induces the beenian to make his honey house tight and secure against the entrance of even a single bee; for he knows that where one squeezes through, thousands will soon follow. While the house is thus made bee-tight, it is usually at

the same time made almost air tight; almost, of course, for we may find a little framed screen, perhaps 18 inches square (often less), revolvable on pivots set in the exact middle of two opposite sides of the frame, by means of which imprisoned bees can be set at liberty by turning the inside of the screen outward; and this screened aperature, when not covered by bees is also the ventilator and window of the room.

Not only to keep the house cool; but on the principle that bees do not trouble so much in a darkened room, are many so-called honey houses built under the dark but inviting shadow of an oak tree; even though these trees are usually, at least here in Southern California, badly infested with the industrious ant. Happily, there are exceptions to this; there are roomy houses for extracting and handling the freshly gathered honey, where the needed light is obtained by turning windows, and revolving screens, but, as stated, these are exceptions; and such screens and windows are expensive to make; for, if not exact, they do not answer the purpose; and no bee can get out unless released by the beeman; while many are injured by flying against the window.

Two years ago, while suffering from these disadvantages, I decided to try a new plan: I made an opening in my honev house 212 feet wide by 4 feet high, on the windy side, covered this with wire cloth, tacked on straight and tight on the sides and below, but leaving it loose on top from whence it extended, loosely, ten inches above the opening in an oblique outward and upward direction, so that the upper part was clear of the wall. Then I tacked on a separate piece of wire cloth, about ten inches high, on the upper part of the opening, letting it extend the whole width of the opening. This matched the projecting, outside upward piece. I then folded the ends of the two pieces together so that the sides were tight, leaving an opening on top of about half an inch, and nearly 21/2 feet long, forming a

bottomless flat, wire gauze back, with its top clear from the wall.

When all was complete I opened the honey house door to let in a quantity of bees; and, as soon as these were filled with honey I had the fun of seeing them fly to the screen, march straight upward and escape above through the opening; and the pleasure was still greater when I became convinced that not a single bee had a return ticket.

A hinged blind or window on the outside to regulate the draft, or keep out wind and rain, is easily constructed so as not to interfere with the screened passage of the bees.

Each separate screen should have an escape, and each window should be faced inside with wire gauze with an escape on top, when screen doors to pass in and out should not be used.

Now we have a bee escape which is simple and perfect, made at a trifling expense, always ready to accommodate any number of bees at a time, and not hampered by patent rights. We can abandon revolving screens and turning windows, for they are, after all, a menance to the bees, and an obstruction to the light and fresh air. The arrangement that I have means not only comfort and convenience but an aid to health, and leaves no excuse for working in the overheated, impure air of an illy ventilated honey house.

ESCONDIDO, Cal., July 9, 1900.

[I once had a honey house the windows of which were furnished with wire cloth screens in exactly the manner described by our western friend, with this exception: The wire cloth extended up the side of the building, on the outside, above the window, to the extent of perhaps six or seven inches. The cloth was held out away from the side of the building perhaps 38 of an inch, by little strips of wood under the cloth. The bees would alight on the cloth, crawl up, go under the cloth where it extended above the window, and then keep on crawling until they reached the open air. This was practically a success, although the bees would gather in

little clusters at the outer opening, and robbers would congregate there, and, to a certain extent, the bees would work back, down into the building, but not enough to be a serious drawback. Whether carrying the opening out away from the building, as described in the foregoing article, would make any diffdrence, I am unable to say. At least, our friend seems to find it satisfactory.—Ed. Review.]



ATIONAL QUEEN BREED-ERS' ASSOCIATION. BY J. O. GRIMSLEY.

The broad term of bee-keeper, and the National Bee-keepers' Association, includes every phase of the business—the novice, specialist, queen breeder,



supply dealer, and the all important editor and author. Every feature of the business is represented, and all enterprising members should be members of the association. For poultry-keepers there is

the American Poultry Association, which covers every class of poultry, and it numbers breeders of every class. Then, there are clubs for each breed, and these clubs in turn have the breeding in their hands, and the standard conforms to their wishes.

Until 1897, we had among the beekeepers only the one kind of association, looking in a general way after the interests of bee-keepers. Their work in protecting their members against the spiteful work of envious non-bee-keepers, and their earnest fight against honey adulteration are features that commend the association to all. But, with all its vigilance, it has never established a standard to

which queens should be bred, having left the business of breeding to the individual notions of all who saw fit to launch out in the business. Purchasers of queens were therefore at the mercy of breeders, and no one but the breeder himself knows to what extent that mercy is extended. Seeing the necessity for a breeders' club or association, the plans were laid for the organization, which was perfected by adopting a set of by-laws and electing officers for a National Queen Breeders' The union was organized in 1897, and early in 1898 the officers were elected. G. W. Hufstedler of Beeville, Texas, was elected president; J. B. Case, Port Orange, Fla., vice-president; W. H. Pridgen, Creek, N. C., general director, and J. O. Grimslev, Byrdstown, Tenn., secretary and treasurer. At present J. B. Case is president; W. H. White, Blossom, Texas, vice-president; E. R. Jones, Milano, Texas, general director, and J. O. Grimslev, secretary.

The union is looked upon by some as an organized partnership, or company, but such is not the case. It is the same class of organization as an ordinary beekeepers' association, with restricted, definite objects in view. There is no referance to any branch of the beekeeping business except queen breeding.

A careful reading of the by-laws will convince the most skeptical that the union will play an important part in beekeeping in the future. There is no restriction on prices, each member making his own price, but he must, in all cases, come up to the standard established by our "descriptive list." We fix the same for our vellow bees, and the standard covers Italians, Golden Italians, Albinos Standards will be fixed and Carniolans for other races as they become established sufficiently to justify. Should a member send out queens which are not bred according to the standard, his customers must be made acquainted with the facts. And, should a member not deal honestly with his patrons the union makes good all loss. On the other hand, there is occasionally a shark among buyers, or dealers, and when one succeeds in "working" a member, each of the other members are made acquainted with the facts.

The union will never have a large membership—there are not enough breeders to make us strong in numbers. There is a good number of first-class breeders who would be gladly received into the union—in fact, all honest breeders are wanted.

The foundation for success in honey production is good queens, and upon a

will insure first-class queens. We tolerate no haphazard breeding, and fraternally the members are a unit, there being no discord. The minority yields gladly to the wishes of the majority, and as little as may be thought of it, the time is coming when the union will wield an influence beyond all expectation.

Among our numbers are some of the leading breeders of the United States, and the other breeders of equal rank must join and help in the work. We



THE OLD HOME OF J. O. GRIMSLEY, ORIGINATOR OF THE QUEEN BREEDERS UNION.

well organized queen breeders' association will rest the future of bee-keeping.

The National Queen Breeders' Union might as well be that association, and every queen breeder and bee keeper should stand by it, even if it is only to speak a good word in commendation of an established standard. Bee-keepers will, when they once see the benefits arising from it, demand a standard, and breeders will join in maintaining it.

The union proposes improvement, and its members must use such methods as

should be glad that an organization of queen breeders did not have to be a creature of the twentieth century. Let us all work in harmony for the union, and in turn for the good of bee-keepers.

The photograph accompanying this article was made in the autumn of 1896; and shows my father and mother taking off unfinished sections, and equalizing the colonies for winter. To the left is my brother, who has just been out feeding his pigs, turkeys and chickens. The hives used are Langstroth pattern,

with telescope cover and "portico," and were all made by hand by myself. March, 1897, my father died, and I came home from Texas and took charge again; after which the yards were known as the Maple Vale Apiaries. The honey from these apiaries has never sold for less than 15 cents, and some has brought us 20 cents per pound in section, and premiums at the fairs when entered. But the main use to which the apiaries have been put since 1893 is experimental work, when I introduced the first Italian bees our country ever had. Carniolans, Golden Italians, Holy Lands, and Albinos have each been tried to a limited extent. Imported Italians have, however, proven the best for this country, and now all our country is stocked with "John Grimsley's bees."

Failing health required me to abandon the work for a time, and I again tried South Texas, hoping to recuperate, but with little success. I will likely try Florida this winter, and hope for recovery.

Byrdstown, Tenn., June 28, 1900.



ANAGING OUT-APIARIES
WITH NO HONEY-HOUSE
AT EACH APIARY, BY
H. H. HYDE,

In my last article on out-apiaries, nothing was said about a honey-house for each apiary, for the reason that we do



not use a honey-house at out-apiaries. A large building at our home-apiary answers for the storing of hives, supers, etc.; and we have a special wagon for handing bees, empty hives, supers, honey, etc.; be-

sides, we use what we call a traveling extracting-house, which is placed on our

special wagon when we wish to extract honey.

Our wagon has what is called the California width of track; viz: 5 feet 2 inches. The running gear is constructed of heavy oak wood; the wheels are the Electric steel wheels, with tires four inches wide. The front wheels are 28 inches high, and the hind wheels at inches. The gear and wheels will hold up five or six thousand pounds, and are so constructed that the front wheels turn clear under the bed.

On this gear we constructed a bed 12 feet long, and 4 feet 2 inches wide, outside measurement. The inside is $48\frac{1}{2}$ inches wide. The bolsters come through holes cut in the right place in the bed. The first part of the bed is really a platform only 6 inches deep; then comes the bed-sides proper, which are 12 inches wide. On these we can put as many side boards as we like. We also use a heavy pair of wagon springs on the wagon when hanling supers, honey, etc., often using four mules or horses, and hanling four or five thousand pounds at a time.

By using this outfit we hand all our supers home in the fall, clean them up and fill them with foundation during the winter, when not otherwise busy, and take them back to the apiaries in the spring. In this connection it should be noted only the comb honey supers are handed, and that all extracting bodies of comb remain on the hives all winter. During the spring we hand out all the hives and supers that we will probably need during the season; and by carrying large loads, only a few trips are needed.

There are three things that we have found vitally necessary in managing outapiaries; they are, first, a good stock of bees with good queens; second, plenty of room for the bees and plenty of room for the queens to lay; third, plenty of honey in the hives at all times. Around these three things centers the successful management of out-apiaries at all times. I can but emphasize the importance of a good race of bees and good queens. Very much has been written

lately on this subject; but none too much, however. We know it does not pay to keep poor queens anywhere. We want queens to be of good stock, large and prolific. The qualities I think bees should possess are as follows: First, honey gathering; second, prolificness of the queens, and their ability to bring a large force of bees on the field of action at the right time; third, gentleness; fourth, the least swarming; fifth, good wintering qualities, and sixth, well, I will say it is beauty, if beauty is a good quality.

The second statement above calls for What I mean by plenty of room. is that queens should never except in the fall) lack for room; give them all the combs they will occupy. I never saw a colony too strong to suit me. It takes bees to gather honey, and the more in a hive the larger the yield. I believe a colony of 100,000 workers will store three times as much honey as a colony of 50,000. Then, when the harvest comes, give the bees all the room they can possibly use; don't let them be crowded. If there is no crowding, one of the great causes of swarming is done away with; and the less swarming at an out-apiary the better. The third statement was plenty of honey. What I mean by this is that the bees should be left in the fall with plenty of honey to winter them and to rear a large force of bees to gather the harvest another year. We have found that it is far better to have old honey in the hives when new honey comes, than to have just enough, or not enough, which results in a few dead colonies.

Now, to fulfill all the above requirements, a large hive, will, of course, have to be used. I want nothing smaller than a 10-frame hive. We still use some three hundred 8 frame hives, but we have just that many more than we want. In my next I will give the management we use during the honey-flow.

Hurro, Texas, February 26, 1909,

NTRODUCING QUEENS BY USING TOBACCO SMOKE. BY E. A. JOHNSON.

You ask how I introduce queens with tobacco smoke; I give it with pleasure; only let me say that I am indebted to Henry Alley for my system.

Make a swarm queenless three days before you expect the queen to arrive, at the same time destroying any cells that you find. When the queen arrives, after the sun goes down, take a small Bingham smoker, put in a small bunch of excelsior, light from the top, then put in a good pipefuli of Virginia natural leaf tobacco. When I don't have the above, I use Bull Durham, a granulated tobacco, costing 65 cents a pound. After putting the tobacco on the excelsior, put on the top of the smoker, and, as soon as I get a faint odor of tobacco, I blow in at the entrance one good puff, or two small ones. I wait for all bees to run in; in from one to three minutes some will return, then, with a small puff, I send them back, open the hive quite roughly, remove the honeyboard, and, with a small puff of smoke send them down. I then take the queen cage remove the tacks from wire, raise the wire, and let the queen run in on top of the center frames. Should she go down at once, I follow her with a slight puff of tobacco. Should she take wing, I remain where I can watch the alighting-board and frames. She will return inside of five minutes. Should she start to run in at the entrance, I pick her up and put her on the frames. I find it a good plan to just blow a whilf from the smoker over the cage before releasing the queen. I then cover the hive, and the only attention I give for three days is to feed a pint of syrup each night from the inside of hive. This is terr executial.

In half to three-quarters of an hour from the time farelessed the queen 1 relight the sancker, putting in tobacco as before, and blow in at the entrance two or three good puffs.

I hope this method is clear to you, for it is safe to gamble on 99 safe introductions in 100. The only danger is in using too much tobacco smoke. You see, the bees all get gloriously drunk on tobacco. They may have cells started, but before they are fairly over their spree the queen has run about and destroyed the cells; perhaps, commenced to lay. The after-smoking is because of danger from late bees returning and balling the queen; or in case of not reaching all the bees sufficiently at first to keep them in a stupor until the queen has actually got possession. When morning comes they are ready for work.

In your "Advanced Bee Culture" you speak of using chloroform. I cannot think that it is just the thing for a novice. The vapor is invisible, and there is no way to regulate it with a smoker, and the treatment I think is too cruel—tobacco is bad enough.

Now, friend Hutchinson, don't you see that my method of introducing is a better one for you to recommend, especially when a shipment is made a long distance, and the queen gets tired out, and the nurse-bees are weak and sometimes dead? You ship, we will say, Saturday noon, the queen arrives here in two days, or possibly, Wednesday morning; for two days she remains in the cage, and, possibly, weather prevents opening the cage to remove her one day more, and she has practically spent a week in an exceptionally small cage. With my way you introduce directly upon the combs the night she arrives.

The reason 1 continue feeding for three days is that I think it gives the colony a more contented feeling; it starts the queen to laying, and gives a better opportunity to find the queen. After the third day I inspect the colony, and, if doing well, I put back the super.

It is needless to say that the last two queens you sent me are doing splendidly; they came in good condition.

I admit I a n very thick to catch anything, but don't you think your title, "Advanced Bee Culture," very misleading? Before I took up bees I bought

everything which I judged an amateur wanted. Did I buy your book? No. I was looking for primers and first readers. Now, had your chapter on "Mistakes of Beginners" only have reached me in Langstroth, Ouinby, or A BC, half of the "know it all" would never have consumed me, and the discouraging experiences would not have been as many. I would in a friendly way suggest that a department in Review be set apart for beginners to give their mistakes. Perhaps it would amuse the old timers and would give us youngsters a few points that we are all looking for. Gleanings has a strong tendency to Dr. Miller and Doolittle, this, and that, and very occasionally an item occurs to interest the novice: at least this is as it occurs to me. Pardon me for being so lengthy-it's my way.

E. PEPPERELL, Mass., August 7, 1900.

[Friend Johnson, 1 am very favorably impressed with your description of how you introduce queens by the use of tobacco smoke. I have never used it. neither have I used chloroform. Mr. D. A Jones, who was once so prominent in the bee-keeping affairs of Canada, was very enthusiastic over the introduction of queens by the use of chloroform. He used it in a small smoker in about the same way as Mr. Johnson uses the tobacco. He first puts a dry sponge in the bottom of the smoker, then a sponge saturated with chloroform, and, on top of this, another dry sponge. The vapor was then puffed into the hive the same as smoke. I doubt if the use of chloroform is any more cruel, if it is cruel, than the use of tobacco smoke, but I should expect the effects of the tobacco smoke to be more lasting than that of chloroform. Without having any experience to guide me, I should be inclined to give preference to tobacco smoke as compared with the use of chloroform, Tobacco is something very easily obtained, even away out in the country, and, without knowing positively, I should think that the effect of the tobacco would last longer and give

greater opportunity for the queen to become established. If I am wrong in this view. I wish to be corrected. At present I know of only one method of introduction that can really be called infallible, and that is of releasing the queen in a closed hive in which are several combs of just hatching bees, the other bees having been brushed off. Just hatching bees never molest a queen. In selecting the combs, care should be taken to secure such as have the least unsealed brood, and the most hatching bees. The hive should not be allowed to stand in the sun, if the weather is very hot, although this might be an advantage in the spring. In four or five days, the entrance can be opened enough to allow a bee to pass. If this work is done at a time when bees are inclined to rob, there must be extra precautions taken to prevent it. If the use of tobacco smoke is practically an infallible method, it ought to be more generally known and advised. As I have said elsewhere, if any one has failed with it, let him tell of his failure, and give the reason, if any is known.—ED, REVIEW.]



ELGIAN HARES. SOME-THING ON THE OTHER SIDE. BY H. D. BURRELL.

Think twice, bee-keepers, before rushing into the Belgian hare business. I have them, and a good many are kept around here. I have learned by experience and observation that they are much more trouble than poultry, and less profitable. The business is being boomed mainly by those who have stock to sell at fancy prices. There is no regular market for the meat, even in a large city like Chicago; and the selling of breeding stock is a limited business, unless much time and expense is devoted to it. The same effort devoted to poultry, or more bees, will prove more profitable and satisfactory. A hare will not "live for a month on 20 cents worth of hay at \$10.00 per ton," and do well. They require a variety of food, and much care in feeding. They are subject to about as many diseases as poultry, and have a discouraging way of dving off without any apparent cause. If many are kept together they will fight to kill. If kept in close quarters, much care is required to keep the pens clean and dry, or the hare dies. Careless people, and very busy ones, sometimes, neglect these points. If in open yards, they must be protected from dogs and cats, and the young from rats.

Can anyone tell positively if Belgian hares would disturb bees and get stung if kept in the apiary? They would be handy to keep down grass and weeds among the hives, but trees and shrubbery would have to be protected, and the fence would have to extend at least eight inches into the ground, or they would escape by burrowing. Of course, they are prolific, and the meat is fine to eat. and they are nice playthings for children -(until they tire of them), but the most successful breeder I know of allows his does to raise only four litters of six each a year, and says this is imperative if hardy, good sized stock is desired.

SOUTH HAVEN, Mich. July 25, 1900.



BEES STAY BY THEIR CAGE.

Somebody sent me a cage of half a dozen bees to show me their markings. I disliked to kill them, so I pried up one edge of the wire cloth, and set the cage out on a corner of the porch. The bees flew, circled around and came back to the cage. Often, during the day, I see one or two of them out circling about, but at night they are all back in their cage—all the home they have. Of course,

there is food in the cage, and I presume that they might live in this way as long as warm weather lasts. They have been there now some two or three weeks.

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Bro. Hill, of the American Bee-Keeper, accompanies his advice regarding robber bees by a very realistic picture—one that most of us have seen. All the cracks are black with masses of bees, and the air is full of black streaks.

HONEY DEW, of plant-lice origin, was found by Prof. Cook, on the pine trees of Cloud Rest, 10,000 feet above the sea. He gives in the American Bee Journal a very interesting account of his visit to this high altitude.

"GOOD HONEY AND GAB did it." That is what Mr. J. T. Hariston of Indian Territory, writes me in regard to his selling 3,300 pounds of honey in his home market inside of three weeks. Good honey and gab make a winning combination.

BEE-ESCAPES are not usually left on the hives long enough to become clogged with propolis, but if they are found so clogged it is easy to clean them by boiling them in concentrated lye, and afterwards rinsing them in cold, running water. This I learn from an item by Mr. Muth-Rathmussen in Gleanings.

CLEANING WAX from utensils is made casy by first scraping them and then washing them with kerosene. This makes the wax soft and pasty, when they may be washed the same as one would wash any greasy vessels. Mr. F. L. Thompson writes this to the Progressive, and I know from experience that it is true. Mr. Thompson gives a cantion as to the careful watching needed when wax is allowed to boil. It may boil over very quickly,

spoiling floors and tempers, and endangering property.

CONFINING VIRGIN QUEENS and then introducing them when several days old, thus gaining time, is not approved of by Mr. Doolittle, in the American Bee Journal. When the proper age comes for a queen to take her flight, if she is prevented, she is injured to the extent of the efforts she puts forth to accomplish her purpose.

ADVERTISING in the local papers has been found one of the best methods of selling honey that has been practiced by C. Davenport. He describes his success in the American Bee Journal, and says that much can be done to overcome the fears of adulteration by offering rewards for the detection of any adulteration.

SEASONABLE ARTICLES are always welcome at the Review office. Try and write of those things that will be of interest a month or two later. Marketing and the preparation of bees for winter will be of interest the next two or three months. Nearly all of the correspondence that appears in the Review is paid for. I certainly would be pleased to receive articles with a view to their appearance in the Review. If I don't find them adapted to the needs of the Review, I wish the privilege of returning them.

BISULPHIDE OF CARBON has been used to a limited extent for the funnigation of honey to destroy the larvæ of the bee moth. C. Davenport gives his experience to the readers of Gleanings. The fumes from this substance are explosive, the same as is the case with the vapor from gasoline. Bisulphide of carbon is superior to sulphur in that it destroys the eggs as well as the larvæ. The bisulphide is simply left in an open vessel to evaporate in a closed space containing

the combs to be treated. The use of this chemical does not have any bad effect upon the combs as is sometimes the case with burning sulphur.

"Success" is the name of a dollar-monthly published at Washington Square, New York city. I know of no journal that I would sooner recommend to my readers than this one. There is something about the reading of "Success" which stirs the ambition. It is akin to the hearing of martial strains in the way of kindling patriotism.

CONVENTION REPORTS should give only those things that are of interest to the readers of the paper in which the report is to appear. Bro. York mentions a case of where more than two pages were devoted to the giving of what the different members said when the convention was trying to decide upon the place for holding the next meeting. This talk was all proper, but of little interest to the readers: all that they would care for is to know where the next meeting is to be held. There is a great deal said at a convention that doesn't amount to a hill of beans. It can't be otherwise: and the reporter ought to edit his report the same as the editor of a journal edits his journal.

CARNIOLAN BEES are very highly praised by Mr. C. W. Post of Canada. At the last meeting of the Ontario Bee-Keepers' Association he reported that he had secured between three and four tons of buckwheat honey, and it was all stored by Carniolan bees. This was not a matter of locality, as the Carniolans were placed promiscuously in the same yard with Italian hybrids. Many of the latter required feeding with combs of honey taken from the Carniolans. He said they beat any bees he ever knew in wintering and building up in the spring. He found large hives better adapted to their needs

than was the case with small hives. He used a hive the equal of 11 Langstroth frames. All of this illustrates the great difference there is in stock.

COME TO THE CONVENTION.

Lay aside every care, take your wife, and come to the Chicago convention. You may not learn enough about bees and bee-keeping to fill an encyclopedia, but this friction of mind against mind, this rubbing up against our fellows, sharpens our wits, gives us broader views, and makes us better bee-keepers and better men. Then there is the pleasure of it. This life is not simply a life of dollars and cents. At least it *ought* not to be. The man who has worked at home all summer owes himself and wife an annual outing with kindred spirits.

CARBOLIC ACID is recommended in the Australian Bee - Keeper, by Mr. H. L. Jones, for use in bad cases of robbing. The odor is very obnoxious to bees, and he says that only the legitimate occupants of the hive, with their strong attachment for home, will pass it, while the marauders are content to sniff it from afar. seems to me that nothing can be more persistent, and pushing, regardless of consequences, than a robber bee. When robbing is once fully aroused it seems as though nothing short of death would stop a robber bee. Of course, Mr. Jones has tried this plan, and knows what he is talking about, while I have never tried it. A weak mixture of acid and water is sprinkled at the entrance of the hive that is attacked. Remember that this acid is a rank poison.

CLIPPING A OUNEN'S WING.

Dr. Miller, A. Norton, and the editor of Gleanings, discuss some of the different methods of clipping a queen's wing. I have tried the methods that they mention, and several others besides, and I have

never found any better way than the one recommended by the editor; viz., that of simply picking up the queen by the wings, using the thumb and forefinger of the right hand, then transferring her to the left thumb and forefinger, taking hold of her by the thorax. As he explains, the thorax has a hard, chitinous covering, and, with ordinary care, there is no danger of injuring a queen in holding her by this part of her body. While holding her in this manner, clip her wing with a pair of scissors. The only trouble is that when the queen feels the scissors she is likely to thrust up a leg, and the careless or nervous operator may cut off a leg as well as the wing. The remedy is not to be nervous or careless. There is no need of haste. Do the work slowly and deliberately. If a leg comes up in the way, wait until it goes down.

INTRODUCING QUEENS — REDUCING THEORY TO PRACTICE.

Introducing queens by confining them against the side of a comb where young bees are hatching out is a good plan in theory. It is also good in practice when the one doing the practicing is an experienced, thoughtful man; but in the hands of a novice there are failures.

The plan of taking away the queen and all of the brood, thus making the colony hopelessly queenless, and then allowing the bees to release the queen by eating out the candy from the end of the cage, worked well this season until the time of the year came when robbers gave trouble. A colony robbed of its brood and queen, although it has a caged queen, does not put up the fight that a colony will that has brood to defend. The disturbance caused by taking away the brood and giving it to other colonies, sometimes incites robbers to begin their depredations. I know that the plan of releasing a queen upon combs of just hatching brood from which the bees have been brushed, and then keeping the hive closed a few days. is an infallible method, but it is considerable trouble, causes a loss of some brood, and may cause robbing in a time of scarcity. I would like to find some easier and better method than these for the novice, and one that is, practically, infallible. I am looking forward with considerable hopefulness to the use of tobacco smoke.

MATARKE PARA

GOING TO THE FAIRS.

How the leading article of this month brings back memories! Mr. Grant has been there—the fact crops out between all of the lines. The getting of things in readiness so as to be taken down quickly; the packing and shipping in such a manner as to avoid breakage; the cot that saves \$1,00 a night at a hotel; and, last but not least, the "lying awake nights trying to devise some novelty whereby to get ahead of the other fellow, when we well know that the other fellow is doing the same thing." What old exhibitor does not recognize all of these? Happy were the days when such men as II, D. Cutting, M. H. Hunt, Dr. A. B. Mason, myself, and some others that I might mention, met each year in an annual picnic on the fair grounds, bringing our tent and provisions, and good comradeship, but meeting in battle royal in the exhibition hall. There is a fascination about all this that is hard to resist; but, one by one, all of these old fellow-exhibitors have dropped out. For 15 years I ching to the making of these exhibits of bees and honey, but other duties have become too pressing and too numerous, and I presume I have made my last exhibit. Let the others take our places, and may they be as happy as we were.

A CHEAP BUT DURABLE PAINT.

Painted hives look better. The paint keeps the nails from drawing out, and the lumber from warping. The less the lumber warps, the better the covers, supers, escape-boards, etc. fit. Some months ago, Mr. F. D. Lacy, of Nirvana, Michigan, sent me a description of a

cheap, but durable, paint. It is made of three parts superfine, calcined, land plaster, and one part of vellow other, or any other fine earth paint costing from two to three cents a pound. For oil, he uses three quarts of kerosene, three-fourths of a pint of linseed oil, one-fourth of a pint of spirits of turpentine, and one-fourth of a pound of melted beeswax. Before adding the turpentine and beeswax, the other ingredients are mixed and brought almost to the boiling point. The paint should be applied warm. The wax makes up for the lack of fixed oil. This paint is better than any mineral paint mixed with clear linseed oil. It is not very brilliant at first, but grows brighter by wear, while the ordinary paint fades by age.

Mr. Lacy recommends the addition of some coloring matter to this kind of paint. He would use chrome green, or yellow, or Prussian blue, or something of the kind, painting some of the hives one color, and some another. I prefer to have all of the hives and supers the same color. It greatly simplifies some of the operations of the apiary. We often wish to change one hive for another, and, if it is of a different color from the first hive, the bees are confused, and try to find some other hive having a color like that of their old home.

TWO EVENINGS OF PICTURES GIVEN BY
TWO EDITORS.

At the Philadelphia convention a new feature was introduced. The showing of pictures by means of a stereopticon, or magic lantern, is not new, but the showing of apiarian pictures at a bee convention is a new departure—at least in this country. That it is to be continued, at least for this year, is shown by the following private letter from President Root, which I have secured permission to print.

MEDINA, Ohio, July 17, 1900.

W. Z. Hutchinson, Flint, Mich.:

Dear Hutch—A special feature of the next convention, on one evening at least, will be stereopticon work, the whole even-

ing being taken up with it. I am purchasing a bran new stereopticon, with the best lens for electric and calcium light, so that the results will be the very best, so far as a single lantern goes. Now, I am scouring the country for good photos from which slides can be made. You have some very fine photos of some apiaries, so, while I shall go down on the program on the subject of "Bee-keepers I have met, and apiaries I have visited," I shall want yourself, Dr. Miller, Dr. Mason and two or three others to throw in some side talks. For instance, I would like to have you tell briefly, on the same evening with me, of E. France and his system, showing his hives, or rather N. E. France, as I suppose it now is. If you will loan me the photos, I will try to get some slides made and give you some of my time in the meeting and I will manipulate the screen while you do the talking. By the way, the making of stereopticon slides is very pleasant work and is very easily done, and when I get to Chicago, I may get von started with the fever. This stereopticon is bought for the express purpose of using at conventions, and I think between us we can get up a set of nice slides that would show up the industry in a way that will be attractive and possibly increase the attendance. At some time in the evening we can show up supplies of the different manufacturers without having to have a whole lot of traps scattered around the

I write von because I feel sure you would like to enter into the scheme, and if you do. I will have you announced as one of the talkers for the stereopticon feature.

I don't know but I may make a fizzle of it; but I want the next convention to be different from any we have had before. There will be one or two hours during each session which will be taken up with question boxes, the boxes being presided over by some prominent bee-keeper present. Then the stereopticon work, while not a novelty, will range on somewhat different lines, and those who are fortunate enough to attend the next convention will be able to see the whole bee-keeping world at a glance, or in a single night.

If you will loan me some of your pictures, I will return them, and, if successful, I will indicate to you what ones we will make over into slides, so that you can prepare notes for each picture. A minute talk on a picture on the average will probably consume all the time that can be allowed, although I suppose we

will have something over two hours and we may have 150 slides, possibly 200; but if I simmer them down to the clear ones, I presume the list will not be larger than 100. We will have to have a recess and Dr. Miller will give a general rest. tribute to Langstroth when his picture is thrown upon the screen, and Dr. Mason will be delegated to take up the funny side of bee culture, and I have told him to be primed and ready to throw in offhand whenever he gets a chance.

> Yours very truly. E. R. ROOT.

Since the above was written it has been arranged that the stereopticon will be used two nights, as will be seen by reference to the program that appears in this issue.

PROGRAM OF THE THIRTY-FIRST ANNUAL CONVENTION OF THE NATIONAL BEE KEEPERS' ASSOCIATION.

To be held at Chicago, Illinois, Tuesday, Wednesday and Thursday, August 28, 29 and 30, 1900; sessions to be held in Wellington Hall, 70 North Clark street:

TUTSDAY EVENING.

Call to order at 700 o'clock.
Song.........Dr. C. C. Miller, Marengo, Ill.
"How to Sell Honey," S. A. Niver, Anburn, N. Y.
"Bee-keeping in the City,".

.... L. Kreutzinger, Chicago, Ill. Onestion-box

WLDNESDAY MORNING -9130.

Song. Invocation

President's Address ... E. R. Root, Medina, O. 'Queen Rearing by the Doolittle Method,' President's Address Mrs. H. C. Acklin, St. Paul, Minn. Ouestion-box.

WIDNISDAY AFTERNOON -1:30.

Song.

Bee-keepers' Rights and Their Protection by Law" Herman F. Moore, Park Ridge, Ill. " Trials of the Commission Man,

......R. A. Burnett, Chicago, III. Ouestion-box

WILDNESDAY FYENING -7:30.

Breeding for Longer-tongued Bees,".... By J. M. Rankin, of the Mich. Exp. Station. Bec Keepers I have Met and Apiaries I have Visited," by E. R. Root, assisted by Dr. C. C. Miller, Dr. A. B. Mason, E. T. Abbott and others. Illustrated by a stereopticon

THURSDAY MORNING = 9130.

Invocation.

"Various forms of Disease Among Bees, Cause and Cure.

. ... Dr. Wm. R. Howard, Ft. Worth, Texas.

Report of General Manager Hon Eugene Secor, Forest City, Iowa. "Pure Food Legislation," Rev. E. T. Abbott, St. Joseph, Mo.

Question-box.

"Chemistry of Honey, and How to Detect Its Adulteration," by Thomas Wm. Cowan, Adulteration," by The Pacific Grove, Cantornia

THURSDAY AFTERNOON-1130.

"How to Ship Honey to Market, and in What Kind of Packages," Geo. W. York, Chicago, Ill Kind of Packages, Ouestion box.

THURSDAY EVENING

"Co-operative Organization Among Bee-keepers," R. C. Mixin, Loveland, Colo "My Trip Through Wisconsin and Minnesota" W. Z. Hutchmson, Flint, Mich. Illustrated by a stereopticon. Unfinished business.

One prominent feature of the next convention will be the stereopticon work. Messrs. Root and Hutchinson, with a powerful stereopticon, will project upon the screen some photos they have taken of apiaries they have visited in different portions of the United States. The convention will be held in Wellington Hall, 70 North Clark street, about a block and a half from the office of the . Imerican Bee Journal, and about five blocks directly north of the court house. The hotel at which delegates may secure lodging is the Revere House, about half a block from the convention hall. The rate for lodging will be 50 cents per night, and the proprietor has assured Mr. York that good beds are provided, but that several will have to occupy the same room. But when anyone desires a room with a single bed, the charge will be \$2.00 per night. If two men wish to take a single room in that way they can do it, sharing the expense between them. G. A. R. people will have to pay 75 cents per night for a single bed, so bee-keepers are specially favored at 50 cents. The hotel is almost within a stone's throw of the convention hall, and right near the hall are first-class restaurants where meals can be secured at reasonable rates.

It is a little too early vet to announce what the railroad rates will be during G. A. R. week; but it is assumed that they will be low, probably a cent a mile each wav.

Chicago is a central point, and there will undoubtedly be a large attendance, it is earnestly hoped that bee keepers will turn out in good strong force.

E. R. Root,
DR. A. B. MASON, President.
Secretary.

BELGIAN HARES.

The Review has had considerable to say regarding this new industry—the breeding of Belgian hares. It has paid more attention to it than have the other bee journals. Perhaps it has devoted too much space to this subject. As a bee journal, perhaps it ought to say nothing on this subject. The point is this: the keeping of bees, or poultry, or Belgian hares, are kindred industries. A person interested in one is quite likely to take an interest in the other. It is not always so, and I am not saving that it is best that it should be so but the fact remains that it is so. A great many men are so constituted that they delight in a cow. and a garden, and a few bees, and some poultry, etc. Such combinations may not lead to any great financial success. They may lead to a comfortable living, but not to the accumulation of wealth that may result from a dairy farm, or from several out-apiaries. My own idea, and my advice, is that of concentration of energies and capital. At the same time, I recognize that all men are not adapted to specialization. There are many bee-keepers who will read in the papers about Belgian hares, and resolve to invest in them. The question is, shall they do it? At present a sort of craze is sweeping over the land, and fabulous prices are being paid, and those who embark in the business now, and get the best stock, will, if they manage rightly, make some money, but the business must eventually come down to a meat basis. That is the foundation upon which it must eventually rest. High prices are paid for breeding stock of pigs, poultry, cattle and slicep, but the foundation for

these prices is the market price of meat, eggs and butter. If there becomes an established market, at good prices, for the meat and fur of Belgian hares, there will be a certain demand for pedigreed stock, at high prices, just as there is now for other stock of this class. Those who are now furnishing pedigreed stock at fancy prices are certainly making money. There is no question about that. What Prof. Cook wrote about the industry in California is undoubtedly t-ue. Dr. Cogshall, of this place, went to California, staved there several months and was so favorably impressed with the business that he and his friends have put one thousand dollars into the business. If any one thinks that all that is necessary to do is to buy a few rabbits, turn them loose in a pen, and feed them occasionally, and then the dollars will roll in he is certainly mistaken. The business must be entered into as a business, and intelligently, at that. The stock must be well chosen, and well cared for, and well advertised. It is something the same with this business as it is with the queen bee trade. A man may have the best of stock, and rear his queens in the best possible manner, but no sales will follow unless he lets people know of the merits of his stock.

Perhaps some will think that I have a money interest in the sale of Belgian I have no pecuniary interest hares. whatever. The members of the Flint Belgian Hare Association are neighbors of mine, men that I have known for years, and I would like to see them succeed, that is true, but not at the expense of my subscribers. If I were interested in booming the business, regardless of the truth. I would never publish such articles as I have in this issue. I wish to get at the exact truth, as nearly as possible. If any of my readers have any criticisms to offer on what has appeared in the Review, I shall be glad to receive it. Of course, I don't expect to go on filling up the Review with articles on Belgian hares, and how to rear and care for them and market them, and all that, there are journals and books on the subject, but this matter of bee-keepers embarking in the business is sure t come up sooner or later, and I don't think it is out of the way for the Review to consider it to the extent of trying to decide whether it is a desirable adjunct to the bee business—provided, of course, that the bee-keeper wants an adjunct.

DISPOSING OF THE CROP.

So many bee-keepers, after having worked hard all summer, and produced a good crop of honey, almost "fool it away" when it comes to the marketing of the crop. Some lose it entirely by sending it to some irresponsible party. If all of the losses of this kind were known, I think some of us would be surprised. In my travels among bee-keepers I am often surprised to learn how men of apparently good judgment have lost hundreds of dollars by sending a crop of honey to some swindler. Where is the bee-keeper who ships his honey to distant markets and has never been swindled? My losses in this direction have been very small-25 pounds of comb honey. This happened several years ago, when I lived at Rogersville. Some firm in Detroit wrote and wished to buy my crop of honey, but before making an offer they wished to see a sample. If my honey was nice, white honey, they would pay 15 cents a pound for it. They asked me to send them, by express, a couple of cases. Upon its arrival they would send the pay for it, and make an offer for the whole lot. They referred me to Bradstreet or Dunn, or, if I preferred, I could send the honey C. O. D. Mr. West, who then lived here in Flint, sent seven cases of honey. Another man living here sent them 20 barrels of cider, having new barrels made expressly to ship the cider in. This firm of swindlers got a large amount of produce from all over the State in just this way. They sold it for cash as soon as it arrived, or else re-shipped it to another State. If one of the dupes went to Detroit he could not find his goods, nor anything else, for that matter, as nothing was stored. It was either sold or shipped at once. Of course, this firm soon found it necessary to seek a cooler climate than Detroit, but they had plenty of money with which to buy winter clothing.

Above all other considerations towers this one of knowing, positively, within the range of human possibilities, that the firm to which you send your produce is absolutely honest and reliable. Better sell your comb honey at ten cents to a firm that you know will pay you ten cents, than to a firm that offers you 15 cents, but about the honesty of which there is the slightest doubt. This is so self-evident that it seems almost like folly to repeat it, but the transactions of every year show that such advice is abundantly The strong point of these needed. swindlers is that they offer just a little more than the market price. Not enough more to arouse suspicion, but just enough to lead the unsuspecting victim to believe that, all things considered, this market is the best. There is usually some plausible story goes with this offer-some apparently reasonable reason why this slight advance in price can be made. Before sending honey to a firm, see how they are quoted in the commercial agencies. Consult their references if they give any. If they don't, then ask for references. This alone will not answer. Swindlers have a way sometimes of getting a fair rating in commercial agencies' books, or of getting good references from some bank by depositing money that may be withdrawn later. A good rating and good reference, count; but, as I have said, they are not everything. In addition to this, I would advise a shipper who is in doubt, to write to the bee journals. A great mass of correspondence goes through the hands of an editor. If a firm is shaky, or is not dealing fairly with its customers, the editor is sure to get a hint of it right away. If a firm does not pay, or is unfair in any way, the first thing the victim does is to write to his editor and ask him what to do. great many things come to an editor in this way that he may not feel at librty to publish. If he did, he might lay himself open to libel; but he can give to a subscriber, privately and confidentially, what it would never do to publish. I think that there have been very few, if any, losses where the shipper has consulted the editors of the bee journals and they have advised shipment. There are a few dealers in honey in this country for whom I would unhesitatingly youch. I would mention them here, only that it would be a reflection upon the honesty of others who may be just as honest, only I am not so sure of it.

After the question of honesty and reliability is settled, comes that of ability and experience. To handle honey to the best advantage and get the best prices a man must know something of the business. I frequently hear of some man sending honey to some commission firm, perhaps because he has been sending it other produce, that knows almost nothing about the honey business. In such cases honey is almost sure to be sacrificed.

Then there is occasionally a dealer or commission man who, while he may not be an out and out swindler, that is, he may make some kind of returns for the goods consigned him, yet there is always something wrong. Either the honev is badly broken, or the packages are leaking, or the bottom has dropped out of the market since the shipment was made. I don't mean to say that none of these things ever happen, but there is occasionally a firm that makes such reports, when it thinks it safe to do so, even when they have not happened. Then there are some firms that are very slow pay. As I have said before, write to your bee-keeper editors. All of these things come to their knowledge.

The question of whether a man shall sell his crop out and out, or ship on commission, is one that has been much discussed. Both plans have their advantages and disadvantages. If sold out and out for a certain price that has been agreed upon, there is no uncertainty and no chance for a dispute or dissatisfaction. The shipper knows exactly how much he is going to get for it, and when he will get it; provided, of course, that he is dealing with a reliable firm. other hand, a dealer can not afford to pay as much cash down, using his own money, as he might be able to get for the goods if he had them on commission. There must be a greater margin for profit if he buys them and puts his own money into them, than when he is doing business on the capital of the shipper, and the latter is taking the risk of a change in the market. If the dealer buys the goods he must buy them at such a price that he can afford to put his own money into them, and then take his chances of making a profit. There has been a lot of talk about the commission man doing business on the other fellow's capital. It is true that he does, and that is the very reason why he can afford to do it on a less margin.

Some shippers limit their commission man. They say, "Get 15 cents for that honey, or don't sell it." I have done this and made money by doing it; and I have also lost by the same operation. knew one bee-keeper who made a large shipment of comb honey, and limited his commission man, and the result was that most of the honey was held until in Febrnary, when it began to candy, and was then sold at a greatly reduced price. a rule, I think it better not to limit the dealer. He is right on the ground. knows the markets, the supply and the demand, the prospects, etc., better than does any one else. I would not send my honey to a dealer unless I had confidence in him, and believed that he would do the best he could, and, having put my honey in his hands to sell, I would not turn around and tie those hands.

Much has been written and said in favor of developing a home market, and of every man selling his own honey, and all that. If a man has a good home market, or can develope one, or if he is a good salesman, such a course is all right, but the best locality for producing honey is often a very poor one for selling, and the best bee-keeper is sometimes the poorest kind of a salesman. In such cases it is wisdom to seek distant markets, and to employ somebody to do the selling.

Lastly, comes the question of when to sell, and it is the most puzzling of any. When there is a large crop the tendency of prices is downward The man who sells early, before the fall in prices, is fortunate. Knowing this, there is a tendency to rush the honey into market when it becomes known that there is a This puts the prices bountiful crop. down still farther; and the bee journals have been blamed for reporting large crops because such reports tend to lower prices. If there is a short crop it seems to be all right to report it, as it tends to raise prices. This matter of when to sell is one of those questions that each man must decide for himself. If there is a short crop generally, and prices are advancing gradually, it certainly seems safe to hold honey a reasonable length of time. As a rule, however, I would not hold honey until winter. Bro. York recently advised his readers to sell at once if they could get a fair price; and mentioned 14 cents as what he would consider a fair price for comb honey. I think that he is not far out of the way. If I had honey to sell I should hold it at 15 cents. If I could get that I should let it go. If not, then I should hold it and watch the market. It may possibly go a cent or two above that, but I doubt it.

Yes, there is one more little point, and that is where to sell. It often happens that the dealers in the large centers, like Chicago and New York, do not pay so much for honey as can be obtained in some of the smaller cities. A man with produce of any kind to sell should be alert and watchful. I once sold my entire

crop of comb honey in Detroit at 17 cents a bound, when the markets in all of the other cities was only 15 cents at the top notch. I saw the quotations in a Detroit daily; took a sample case and skipped at once for Detroit; sold my honey; came home and shipped it the next day; and, within a week, the Detroit market was glutted and prices away down. Last year, at the Springfield, Ill., fair, I was offered 12 cents. I stopped at Chicago while on my way home, and was offered 13 cents. I came on home, and did some correspondence; finally selling it to a Columbus, Ohio, firm for 15 cents on board the cars here at Flint.

In closing I can only repeat what I said at the beginning: having worked hard and produced a crop, don't fool it away. Don't send it to a swindler, nor an irresponsible, or inexperienced commission man, but thoroughly investigate the whole matter, and market your honey in a safe, intelligent and profitable manner, instead of simply sending it off haphazard, and then kicking yourself afterwards for some loss that might have been prevented.

EXTRACTED.

DISEASED BROOD.

How to Diagnose Foul Brood, Black Brood and Pickled Brood.

Notwithstanding all that has been published on this subject, the average beekeeper is at a loss what to do, when he finds something suspicious in the appearance of the brood in some hive in his apiary. The first question that he wishes settled is, "What is it?" What ails the brood? Is it foul brood, or pickled brood, or is it black brood? I have seen no better advice on the subject than the following that I find as an editorial in Gleanings:—

I never have any difficulty in diagnosing a sample of real foul brood. symptoms of that disease are so marked that it is very easy for one who is at all acquainted with its characteristics to determine whether or not it is a case of Bacillus alvei (foul brood); but to decide between a case of black and pickled brood is not so easy, for the two look very much alike, and under some conditions they are alike so far as external appearances are concerned. Knowing that a good many bee-keepers had sent samples of diseased brood to Dr. Howard. I felt that we could hardly ask him to make such diagnoses without compensation, for he is not in any way connected with an experiment station or any government work; and a man of his attainments as a bacteriologist ought not to be asked to perform a difficult service of this kind, requiring years of preparation and study, for nothing. As yet, I know of no one in this country who has been able to discriminate between one and the other absolutely. Black brood, as we know, is decidedly contagious - perhaps more so than foul brood, and quite as destructive. Pickled brood is a mild form of disease. but so far as I know it is not very destructive. Very often it will disappear of itself, and in any event a mild treatment will eradicate it entirely.

We will suppose that a bee-keeper discovers something in one of his colonies that looks suspicious to say the least. If he can know absolutely, by sending a sample to some competent expert, that he has neither black brood nor foul brood, this knowledge may be worth to him hundreds and possibly thousands of dollars

Very recently a queen breeder, who has some 500 nuclei, and who is carrying on the business of queen-rearing very extensively, sent a sample of diseased brood, desiring us to wire him at once what it was. The sample came duly to hand, and I immediately wired back, "Not foul brood possibly black or pickled brood." At the time of sending a sample to me he sent one to Dr. Howard also, and the latter very promptly wired him that it was nothing worse than pickled brood. This information was worth to him hundieds of dollars; otherwise he would have withdrawn his advertising, broken up his nuclei, practically throwing away a splendid trade in queens, at the same time ruining his business perhaps for all time to come. He had only one case in his yard, and that was promptly disposed of.

While we are perfectly willing to perform such services as far as we are able, Dr. Howard can not afford to do them for the mere love of the pursuit. I wrote him, asking him what it would be worth to diagnose diseased samples of brood, and he replied that he thought he could afford to do it for \$2.00; and this I regard as very reasonable, considering that he may have to spend hours with the microscope; so I would suggest that doubtful samples be sent to Dr. W. R. Howard, Fort Worth, Texas, with a letter of explanation, and don't forget to send the money.

In a letter recently received from Dr. Howard, he gives specific directions by which every bec-keeper can diagnose to some extent for himself. Of the three particular brood diseases he gives the following diagnostic signs:—

TOUL BROOD,

GLUE-LIKE consistence of the mass, and the offensive smell.

BLACK BROOD,

JELLY-LIKE consistence of the mass, the absence of ropiness noticed in foul brood, and the peculiar sour-like smell.

PICKLED BROOD.

ALWAYS WATLRY, turning black after being attacked with the mucor fungus—a black mould—and by lacing the larve in a sterilized chamber, keeping warm and dark, in three or four days the white fungus of pickled brood appears. I nearly always place a new larve of every specimen of all kinds of dead brood. Foul brood and black brood are attacked with a fungus, though kept for months.

INTRODUCING QUEENS.

The Use of Tobacco Smoke in This Operation.

Since I published what I did last month in regard to introducing queens, several have written me in regard to their success in using tobaccosmoke. The following query that stands at the head of a short editorial in Gleanings reminds me very much of the ones that come to me. It reads as follows:-

Last summer I lost six queens in introducing according to directions sent out by breeders; but I quit that method and took A. I. R 's method, hinted at in an old edition of the A.B.C, using tol accosmoke at sundown. Out of 36.1 never lost one. Why don't you recommend it more?

B. F. JONES.

Idaho Falls, Idaho, May 7.

The editor of Gleanings replies as follows:-

Tobacco smoke for the purpose of handling bees should be used very sparingly and carefully. It is hardly safe to advise beginners to use it, for its effect is to stupefy the whole colony; and if the fumes are administered during the day there will be an hour or two hours, perhaps, when the bees, slightly intoxicated, would put up no defense whatever at the entrances. If during the robbing season, they would allow robbers to come right in pellmell and help themselves; hence tobacco smoke is recommended for use only at night But even then I suspect the introduction could be accomplished almost as well without the weed. The best time to introduce queens is toward We once released two dozen uight. queens right among the bees, and every one was accepted. The queens in this case were some that came through the mails badly daubed, and reached us just at nightfall. Nothing remained but to let the queens run loose and take their chances, and we were very greatly surprised the next morning to find all of them apparently nicely accepted.

In peculiarly stubborn cases tobacco smoke may be used, especially where the bees are determined to ball the queen, and we have positive evidence that the bees are queenless. I have made a colour so "beastly drunk" (pardon the expression) that when the bees finally recovered from their spree they accepted the queen, when before that they would ball her on sight.

Our practice now is to use smoke only during fair time, for, unfortunately, our county fairgrounds are within an eighth of a mile of our apairy; and during the time the stands are making taffy, selling watermelons, lemonade, and the like, our bees would prove to be a great nuisance unless we went around to all the hives and gave a smudging of tobacco smoke. This is done in the morning, about 8:00 o'clock, and another dose is given about 1:00 o'clock. Half a dozen puffs of smoke are blown in at the entrances, all over the apiary. If the colonies are all stupefied there will be no danger from robbing. This smudging keeps the bees at home. But care should be exercised, as there is danger of overdoing it, and also danger of not doing *enough* of it; for if they have once got a taste of the sweets over at the fairgrounds it takes a great deal of stupefying to keep them at home.

The point that queens are more likely to be accepted when released at night is well taken. The queens being daubed with honey may have had something to do with the success. Laying all these points aside, let me ask if any one has lost a queen when using tobacco smoke?

BELGIAN HARES.

Beware of the Fairy Tales Regarding the Profits to be Made in Their Production.

On this subject of Belgian hares the Review has published an article by Prof. Cook, also one by the president of the Flint Belgian Hare Association, Dr. Bela Cogshall. Both of these articles have shown up the industry in a very favorable light. In this issue there is a short article by Mr. H. D. Burrell, in which he does not consider the business in the light of a bonanza. I certainly wish to show up the business in its true light, and, in looking over the Country Gentleman the other day I came across an article by Mr. T. F. McGrew, of New York city, in which the somber side of the business is certainly painted in dark enough hue. It reads as follows:—

A few years since, I predicted that the broiler-duck business was being overdone when considered from the standpoint of making money. It is true that those who are best established do and will make a profit at the duck-raising business; but the margin is too small to entice those who fully understand its conditions to embark in the enterprise in the hope of making a fortune. It is just the same with the Belgian hare furor. The journals are full of wild statements of many hundred dollars being paid for single specimens, and that thousands of dollars are going to England to secure the best that can be found, and we are told of the great profits to be made in producing them for meat food.

I have produced many hundred rabbits of the Lop Ear and Dutch breeds; none could be more delicute than the Dutch variety, and the Lop-Ear is one of our very largest. I had the most approved hutch system that could be built, and I sold my product all over the country as fancy stock; but my experience was that those kept in hutches did not have the

same flavor as meat food as did those we gave limited freedom, or as the wild rabbit.

As a fancy, the handling of rabbits or hares is most attractive. It is quite interesting to study the influence of color and form from matings made. But the practical question is to produce the Belgian hare for meat food at a profit. they are produced to any great extent, those who raise them must look to the large cities to consume the bulk of the product, which must be sold, if sent to these populated centers, at the market Tturn to our market book and price find I paid at our me it market, December 9 last, just 35 cents for two rabbits; December 19, 40 cents per pair, all dressed ready for use. Now, if rabbits can be sold to families in our meat markets of New York, all ready to cook, at 20 cents each, what will be the price when raised by the thousands?

There is some kind of rabbit fur, or hair, imported into this country and used, I believe, in making hats. It may be that the fur of the hare would do for this purpose. If so, it would add to the value of such a product, and might aid in making their production profitable. But I do not believe it is possible to raise a rabbit of any kind to three months old, if kept in hutches or pens, for 20 cents each in foo l alone, care an I housing not considered. If kept longer, the cost will be more. This is no idle estimate, for my experience with them for over ten years has shown me the amount of food consumed by both the larger Lops and the smaller Dutch, and to make a profit on them as food one must find a market for them at a price considerably above the food consumed.

I have heard it said that thousands of them are sold at \$200 a pair for food meat; but just where they are sold is not mentioned, and why they should sell for five times the price I paid in December for them in our market is a question I cannot answer. It is true that the Belgian hare is larger than our wild rabbit, but by the time they are full-sized 1 am sure they will consume, if kept in hutches, fully 50 cents in cost of food. and to rear them even at this cost, the greatest care must be exercised, and the plainest and cheapest food must be used.

If a market can be found for them at paving prices, their production is very easy. But I hardly believe they can be produced in hutches and put in good condition for market at a cost of 50 cents each. Rabbits must be in good condition or they will be very slow of sale,

as educated people consider them only as a winter food, and it will take considerable training to teach the people to eat them during the spring and summer. You will also find many who believe their flesh injurious as a food at any time.

All these conditions are factors for consideration when contemplating their production for market. If it were simply a question of producing, we all know with what rapidity they increase. facts are that a market for them in quantities must be created and at a price over the cost of production. Every one can be informed as to their cost in his own home market. With this information at hand, under present conditions, it is quite easy to calculate their value under

largely increased production.

With properly constructed warrens, the cost of production would be much less than in hutches. The very poorest kinds of lands can be used for warrens, but they must be properly enclosed, so that the rabbits can neither get out by digging nor through the fences. Such constructed warrens might prove profitable where breeding in hutches would fail. only question is the ability to produce them at a cost less than they will sell in the open market, and to calculate to have them ready for the winter months.

For the benefit of your readers, I called on one of the largest handlers of poultry and game of all kinds in this city, and asked him about the Belgian hares as a salable product. I was informed that there was no sale for them except during winter months; that they were not a favorite food in the market with any classes; that they sold the past winter to a limited extent at from 50 to 75 cents per pair, and weighed from 8 to 12 lbs. per pair. It was not thought by the dealer that the demand for them had increased in the last few years, nor did he know of any reason why it should increase in the near future.

Belgian hares are a species of rabbit. They, I ke all rabbits, produce young in litters of from six to as many as fourteen (the larger number quite rare); while I believe it is the habit of the English hare to produce in pairs. The Belgian hare is the rabbit from Belgium, and is called the Belgian hare because it has much the shape of the English hare, having long fore legs and the slim formation at shoulder. The Pelgian hare is by no means a new production. I have known of them for twenty-five years. Twenty years ago they were largely bred in England as a fancy rabbit, and were used to cross with silver greys for producing for the market.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to those rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells un-ealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

CHICAGO, II.L.—The new crop is now coming forward and is selling quite well, the demand being good for all grades. We quote as follows: Fancy white, 15; No. 1 white, 13 to 14; fancy amber, 11 to 12; No. 1 amber, 9 to 10; fancy dark, 9 to 10; No. 1 dark, 7 to 8; white, extracted, 7 to 7½; amber, extracted, 6½ to 6½; dark, extracted, 6 to 6½; beeswax, 28.

R. A. BURNETT & Co.,

Augnst 3.

163 So. Water St., Chicago, Ill.

CHICAGO.—We have plenty of room on the top floor of our store, which is dry, for storing comb and extracted honey, and any parties wanting to ship can have advances on consignment. We also buy—Trade on comb honey will be quiet until small fruits are out of the market. Best white comb honey is selling at 15 ets a pound. Extracted, as to package and quality, from 6½ to 5 ets a pound. Beeswax 28 ets pound.

S. T. FISH & CO.,

August 3.

189 So. Water St., Chicago, Ills.

NEW YORK—The market is bare; we are short of stock, and there is a good demand for amber and white comb honey. Extracted is quiet, with sufficient supply. We quote as follows:

Kaney white, is: No. 1 white Lt. fancy amber.

Fancy white, 15: No. 1 white, 14; fancy amber, 13; No. 1 amber, 11 to 12; white extracted, 7 to 7^{1}_{2} ; amber, extracted, 6 to 6^{1}_{2} ; beeswax, 25 to 29.

HILDRETH & SEGELKEN,

120 West Broadway, New York.

BUFFALO-As the berry season is over a fair demand prevails for fancy new honey. We advise small shipments at present. We quote as follows: Fancy white, 15 to 16; No. 1 white, 13 to 14; fancy amber, 11 to 12; No. 1 amber, 10; fancy dark, 9 to 10.

BATTERSON & CO.

Aug. 3. 167 & 169 Scott St., Buffalo, N. Y.

KANSAS CITY.—We quote as follows; Fancy white, 15; No. 1 white, 13 to 14; fancy amber, 13; No. 1 amber, 12; white extracted, 8½ to 9; amber, extracted, 8; good demand for beeswax at 22 to 25.

W. R. CROMWELL, FRUIT & CIDER CO., Successors to C. C. CLEMONS CO.,

Aug. 4. 423 Walnut St., Kansas City, Mo.

NEW YORK-There is little comb honey on our market, and practically no demand through our channels, just at this time; no doubt caused largely on account of the risk in shipping during warm weather. We usually do little on comb honey before September.

We do not advise the shipping of extracted honey just at this time, for the reason that there is not much demand, and quite a liberal supply, although with our usual trade at this time of the year it would not take long to clean it up. We can hardly report reliable quotations at this time, but we certainly must look for lower prices than last season.

FRANCIS H. LEGGETT & CO.

July 17. W. Broadway Franklin & Varick Sts.

WANTID-HONEY Would like to hear from parties have

Would like to hear from parties having honey to offer.

Wanted Extracted Clover and Basswood, such as suitable for bottling trade; also Fancy White Comb-Honey in no-drip shipping cases. I PAY PROMPTLY ON DELIVERY, and refer you to the A. I. Root Co., or The Brighton German Bank of Cincinnati, Ohio.

C, H, W, WEBER,

2146 Central Ave., Cincinnati, Ohio.

See the Points?

I have had 15 years' experience in producing honey and rearing queens, and I am breeding queens from a queen that I got last spring from J. F. McIntyre of Sespe, Cal. He describes this stock on page 12 of Gleanings for June 1, as filling the supers when other bees were starving. The drones in my yard are from excellent stock—such as that of J. P. Moore of Kentucky. I rear queens by the Doollittle plan, send them by return mail, and guarantee safe arrival, purity of mating, and satisfaction, at 50 cts each, in any quantity. Money refunded if queens are not satisfactory. Send for circular.

L. H. ROBEY, Worthington, W. Va.

ROOT COMPANY'S PAGE

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SHIPPING Our No-Drip Cases are still in the lead. We keep constantly on hand a large assortment from 12 pound size up. We also make special sizes to order. That Root's cases are in demand is shown by the fact that one dealer alone has ordered 16,000 this season.

WINTER Our Winter-Cases are made of thin lumber dovetailed at the corners with a telescope cover. The cost is only 75 cents each singly, yet for convenience they are unsurpassed and only excelled by the Chaff Inve in the protection afforded. Don't let your bees winter-kill or spring-dwin-lle when you can avoid it by using our Winter-Cases.

HONEY
LABELS

To you use labels for your honey? Are they really attractive labels?

If you do not you may be losing many sales because your honey lacks attractiveness. You can't expect to market your honey at the best price unless you use every care in putting it up. Send for our Label catalog and see our one, two and three-color labels.

BICYCLES

AT COST

at market prices. Having sold a carload of bicycle crates we took in trade a quantity of wheels, which we will sell at cost. These are \$30.00 wheels. Our price, \$17.00 cash, or \$20.00 in trade for honey or wax. Catalog and full particulars on application.

FOUNDATION

If you order Root's Weed Process you may be sure you will be pleased with the result. We keep in stock the four grades in boxes of 1, 2, 3, 5, 10 or 25 lbs. A small order has the same attention as an order for a ton.

SPECIAL This is the time you should order odd size or special goods. Our busy season is over and we can do most any work in wood you want, either for specialty of packing boxes from the size of a section box up. Let us figure with you.

FEEDERS How about your winter stores? Are you sure your bees have enough? Should it be necessary to feed you can't do it easier than with our Division-Board Feeder. This is made to hang like a frame in a Langstroth hive. Price, 20 cents each complete—Less in quantities.

Mark size of hand on sheet of paper when ordering. If you order by number, remember that in rubber you need two sizes larger than you wear in kid; i. e., if you wear No. 6 in kid you will need No. 8 rubber.

The A. I. Root Company, Medina, O.

JOHN F. STRATTON'S

CELEBRATED

Birmingham Steel Strings

for Violin, Guitar, Mandolin, Banio Finest Made. Extra Plated. Warranted not to rust. Send for Catig

JOHN F. STRATTON. Importer, Manufacturer and Wholesale Dealer 811, 813, 815, 817 E. 9th St., N. Y.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the Review. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

Queens, Nucl i and Colonies.

Best of Honey Gatherers.

Special prices to introduce during July, August and September. Untested queens, 50 ets each; 55,50 per dozen. Tested, 51,00 each. Nuclei, add 50 ets per frame to price of queens. Write your wants' Satisfaction guaranteed.

S. P. CULLEY, Higinsville, Mo.

Jueens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00, 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

If You Wish Neat, Artistic



Have it Done at the Review.

Our Fall Specialties

Are your Fall Necessities-

- SHIPPING CASES, FIVE GALLON CANS, DANZ CAR-
- 0 TONS, AND CASH OR
 - TRADE FOR BEESWAN

Catalog. Send for

> H. HUNT & SON, Bell Branch, Mich.

DOES IT PAY?

To buy poor queens, or those selected to give very YELLOW BEES, when you can get a strain of yellow bees that for years has been bred for HONEY GATHERING and PROLIFICNESS? is a sample unsought testimonial:

"Some of the queens I got of you are won-derful layers; in fact, I have been able to get hold of uch stock only once before

THOS. BRODERICKS. Moravia, N. Y." See back ads, and circular, —see back aus, and circular. Moravia, N. Y.'
FOR TRIAL, I offer: warranted queen for focts; 3 for \$1,50; select for 80 cts.; 3 for \$2.25; ordinary tested, 75 cts.; select queens, tested, \$1,00 to \$1,50; best, \$2,00 and upward.

1. B. CASE, Port Orange, Fla.

. .THE ...

QUEEN CRANK

Occasionally has some second-class queens as to color of offspring that are first-class in every other respect. That is, three-band bees predominating from golden mothers, and rather than palm them off as untested, he sells them at 50 cts patm them of as untested, he sells them at 50 cts each. Whin five-band bees predominate and do not exceed 80 per cent, they are worth \$1.00. From this up to 95 per cent, \$1.25. A higher grade but not uniformly marked, \$1.50, and breeders \$2.00 each. Untested, either three or five-band, 75 cts each, or three for \$2.00.

W. H. PRIDGEN,

Creek, Warren Co., N. C. (Money order office. 6-100-2t Warrenton, N. C.)

$Exhibition\ Hives.$

1 shall probably make no more exhibitions of bees and honey at fairs I have too many other irons in the fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new, but I would sell them at 15 cents each.

W. Z. Hutchinson, Flint, Mich.

BLACK and HYBRID QUEENS,

In fact, all inferior Queens should be replaced with good young ones. With such queens you will have better success in wintering and a strong colony for the earliest honey flow. I am a honey producer, as well as a queen breeder, and know the value of a good queen in a honey live. I have selected for my mother queens those that I consider perfect in every respect. Their bees are large, gentle, and wonderful honey gatherers. My drone mothers are also carefully selected.

Queens go by Return Mail.

I Untested Queen, 50 cts.; 12 for 5.50, 1 Tested Queen, \$1.00; 0 for \$5.50; 12 for \$8.50 Write for prices on larger numbers.

\$10.00 REWARD!

To the person who sends me the most money for queens between April 1 and November 1, 1900.

W. O. VICTOR,
Wharton, Texas.

Hutto, Tex., April 10, 1900 T. F. Bingham,
Enclosed find \$1.75
Please send me one brass smoke engine. I have one already. It is the best smoker lever used.

Henry Schmidt

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell Send for samples very close. and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,

Augusta, Wisconsin

Settling the Meat Question.

TEARLY every one who is thinking of engaging in the business of rearing Belgian Hares, asks in regard to the profits to be made in rearing and selling them for their meat. Eventually, the business will probably reach that basis, but the man who embarks in the business now need not trouble himself about that feature for two or three years, at the most; and, by that time, his profits will have been so great that he can afford to give away what stock he has on hand, if he can't sell it. The returns are very quick. The profit is in rearing the very finest, pedigreed stock. It costs more to start, but the other expenses are no greater, while the profits are many times greater. A pair of hares that cost, say, \$40.00, will, at a most conservative estimate produce 50 young in seven months. Even at \$5.00 a head, which is far below what choice, pedigreed stock brings, the returns would be \$250.00 in seven months, from an investment of about Where is there another business which offers such profits? We know, that, for the next two or three years, our stock will be taken at high figures, just as fast as we can raise it. At present we are not worrying any about the meat question. The man who goes in now, and goes in right, is going to make some money. There is nothing surer than this. For descriptive circulars and prices, address

The Flint Belgian Hare Association, Ltd.Flint, Michigan......

I have several hundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight.

- If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

1900 Queens 1900

For Business—Queens for Strong Colonies—Queens for large surplus. Competiou in Quality, but not in price.

If you want queens, nuclei or supplies at botton prices, send for my illustrated price list.

12-97-17

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.



Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We al-

so carry a complete line of other supplies.
Catalog free. R. H. SCHMIDT & CO.,
9-99-tf. Sheboygan, Wis

Flease mention the Review.

Selection.

933338888

Selection has been the chief factor in the developement and building up of our improved breeds of horses, cattle, sheep, swine, and poultry. Men have devoted the best years of their life to a single line or branch of this work-and not without their reward. In bee-keeping but little has been done in this direction. The developement of a bright vellow bee has been the most noticeable thing that has been done in this line. This is the most easy of accomplishment, as results are so quickly and easily discernable, To breed for honey-gathering qualities is a much slower process. As soon as bees hatch out we can decide in regard to their color, and as to whether we wish to rear queens from their mother for the purpose of improving the color of our stock; to decide in regard to their working qualities requires months-perhaps years.

Every experienced bee-keeper must have noticed how much more surplus is stored by some stocks than by others. Time and time again, when visiting bee-keepers, have I been shown some particular colony, and heard the owner tell with pride how much honey it had scored year after year; always coming through the winter in good condition, or doing this or that that was so desirable. The strange thing is that bee-keepers so seldom seem to realize the value of such a colony or queen, as a starting-point from which to improve the stock of their whole apiary. If they do realize it, they seldom take advantage of the knowledge. Suppose, by the introduction of improved stock, a man can increase his surplus, on the average, one year with another, ten pounds per colony, and that is not an extravagant estimate, on 100 colonies his surplus would be increased too pounds. The cost for hives, grounds, labor, wintering, etc., is nearly the same with one kind of stock as with another, just as it costs as much to keep a scrub cow as it does to keep a Jersey, and a gain in surplus that comes from improvement in stock is the most profitable that can be secured. To improve your stock, get the NERY BLST that you can for breeding purposes and with this stock your apiary: then watch confully, and breed from these colonies that do the best. Continue this year after year, and you will be surprised at

This matter of beginning with as good stock as you can get, is all-important. Don't lose years of time by commencing with common or inferior stock. Get the best, and thus be able to commence right where some other breeder left off.

As explained in previous advertisements, I am selling queens from stock upon the development of which a good man has spent twenty years; making crosses, and then each year selecting the best to breed from. I have several times tried this strain, and know it to be the best that I have ever tried.

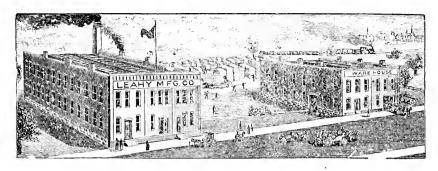
The price of these queens will be \$1.50 each. This may seem like a high price, but the man who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold, it will not seem to high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen should prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to each purchaser, and if these instructions are followed. and the queen is lost, another will be sent free of charge. This is not all: if, at any time within two years, a purchaser, for any reason what-LVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble. It will be seen that the purchaser runs NO RISK WHATLVER. If a queen does not arrive in good condition, another is sent. If he loses her in introducing another is sent. If she should prove impurely mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is really superior.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price and that is in connection with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.6. for the Review for 1000, can have a queen for \$1.00. That is, you can have the Review for 1000 and a queen for \$2.00. Of course, all arreatages previous to 1000 must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arreatages and to pay in advance to the end of next year.

W. Z. Hutchinson, Flint, Mich.

(P. S -For the first time, I am now able to fill orders for these queens by return mail,)

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon–Hive. Wo do not hesetate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. 60., East St. Louis, Ills. Omaha, Nebraska.

Gontraction

Of the brood-nest can be made very profitable if practiced in the right manner, with the right kind of hives and apphances, in the right locality and in the right time of the season. reverse will prove true if mistakes are made. Your locality may be one in which contraction, if rightly managed, would put many dollars into your pocket. All of these points are fully explained in one of the chapters of ADVANCED BEE CULTURE. Besides this, the book contains 31 other chapters n e qually important subjects.

Price of the book, 50 cts.; the Review one year and twelve back numbers and the book for only \$1.25.

W. Z. HUTCHINSON,
Flint, Mich.

Honey FOR Extractor SMF

I have a nearly new, Van Allen & Williams Honey Extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed automatically—without stopping the machine. The regular price of this machine is \$20.00, but, as this has been used some, I will sell it for \$15.00. I would exchange it for bees, or anything else I could use.

Н. Е. НІЦЦ,

Ft. Pierce,

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free.

W. T. Falconer Mfg. Go.,

Jamestown, N. Y.

Fig. W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, haying a very thin base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular price list

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

BLACK and HYBRID QUEENS,

In fact, all inferior Queens should be replaced with good young ones. With such queens you will have better success in wintering and a strong colony for the earliest honey-flow. I am a honey producer, as well as a queen breeder, and know the value of a good queen in a honey hive. I have selected for my mother queens those that I consider perfect in every respect. Their bees are large, gentle, and wonderful honey gatherers. My drone mothers are also carefully selected.

Queens go by Return Mail.

1 Untested Queen, 50 cts.: 12 for 5.50. 1 Tested Queen, \$1.00; 6 for \$5.50; 12 for \$8.50. Write for prices on larger numbers.

\$10.00 REWARD!

To the person who sends me the most money for queens between April 1 and November 1, 1900.

W. O. VICTOR,
Wharton, Texas.

Hutto, Tex., April 10, 1900.
T. F. Bingham,
Enclosed find \$1.75.
Please send me one brass smokeengine. I have one already. It is
the best smoker lever used.

Henry Schmidt

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives. sections. frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

- INAI

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,
Augusta, Wisconsin

Violin for Sale.

I am advertising for the well known manufacturers of musical instruments, Jno. F. Stratton & Son, of New York, and taking my pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradinarius." Red, French finish, high polish, and real chony trimmings, price \$14.00. The bow is of the fin-Red, French finish, high jodish, and real ebony trimmings, price \$14.00. The bow is of the finest snakewood, ebony frog, lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and pearl dot in the end, price \$2.50. The case is wood with curved top, varnished, full-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an even \$2.00. It is exactly the same kind of an outfit that my daughter has been using the past year with the best of ter has been using the past year with the best of satisfaction to herself and teachers Her violin has a more powerful, rich tone than some in-struments here that cost several times as much. I wish to sell this on fit, and would accept onehalf nice, white extracted honey in payment, the balance cash. It will be sent on a five days trial, and if not entirely satisfactory can be re turned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines. Iowa, manufacturer of and dealer in Apiarian Supplies, Send for circular.

Please mention the Review

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind. I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive. J. H. M COOK, 62 Cortland St., N. Y. City

Make Your Own Hives.

Bee - Keepers

Bee-Keepers
Will save money by
using our Foot Pow
er Saw in making
their hives, section
and boxes.

Machines on trial
Send for Catalogue.

W.F. & JKO. BARNES CO.
384 Roby St.,
Rockford, Ills.
1007t Will save money by using our Foot Power Saw in making their hives, sections

Machines on trial.

W. F. & JRO. BARNES CO.,





With a view to extending the circulation of the Review, I make following special offer. For only \$3.50 I will send the Review for 1900, 12 back numbers, and 1,000 strictly first-class, one-piece sections. The Review and 2,000 sections, \$6.00; the Review and 3,000 sections, \$8.75; the Review and 5,000 sections, \$13.00.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queeus, and supplies, and your name on a postal card, will bring you prices of queeus, boes, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The southhand Queen," the only bee paper published in the South. All free for the asking.

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

FOR SALE.

Apiary of 40 colonies of Golden Italians, in ro-frame Doohttle lawes, tegether with fixtures. Everything

in p to date. Also beautiful buildings, existing of seroom, a story dwelling, barn and other ombirdings. Pecch and peut trees, grapes, etc., in barning. No descase. Healthy of mare. Mild winters. No better locality to be had than this to those who descrete occubants in the bee business. Average yielder surplus honey, so pounds to the colony. Photographs sent to those interested.

J. W. MINER, Ronda, N. C.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Avg., Indiana, Only exclusive bec-supply house in Ind.

Please mention the Review

YOU— CAN MAKE MONEY RAPIDLY

LV

THE— BELGIAN HARE BUSINESS

IF YOU

START RIGHT and

MANAGE RIGIIT.

The first step is to secure the BEST PEDIGREED STOCK. This you can get at a reasonable price from the

Flict Balgian Hare Association Ltd.

FLINT—

-MICH.

Write for Circular and Price List and other Belgian Hare information.

MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U.S., and have testimonials from satisfied customers in the U.S. and fereign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 181, 25 oc cach. After June 18, 18 tested queens, either strain, \$1.00 cach; untested, 75 cts each one-frame micleus with queen, \$1.50; two-frame, \$2.50; three-frame, \$3.25

4-00-tf

J. W. MINER, Ronda, N. C.

GOLDEN ITALIAN QUEENS

Which give satisfaction are the kind that H. G. Quirm sends out. The A. I. Root Company tell us that our stock is extra fine. Give us a trial order for our

SELECTED STOCK,

and see how well we can please y.u. All queens sent PROMPTLY BY RETURN MAIL, with safe delivery guaranteed. Have bred queens for 12 years. Price of queens after June:

Ordinary, warranted, - 70 50 52,75 \$5,00 \$6,00 7 00 \$75 \$4,00 7 00 \$6,00 \$6,00 \$1,50 \$6,00 \$1,50

best that money can buy, 3.00

Address all orders to

H. G. QUIRIN,
PARKERTOWN, ERIE CO.. O.

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OUT - APIARY OF H. P. MINER, RETREAT, WISCONSIN,

The Bee-Keepers' Hevis

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers
\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL XII, FLINT. MICHIGAN, SEPTEMBER 10 1900. NO.9.

ANAGING AN OUTAPIARY FOR EXTRACTED HONEY. BY H. P.
MINER.

As to my methods in managing the outapiary shown on the opposite page, there certainly is nothing new, unless it be the *mis*management; as I practice doing only such work as is absolutely necessary.

The apiary is located with a well-to-do farmer, who keeps watch of the bees, and fences the same against stock; boards myself and help while there, for which he gets one-fifth of the honey. Besides the share of honey, he receives 50 cents each for hiving swarms; hence it will be seen that it is necessary for me to visit the apiary only occasionally.

My first visit in the spring is generally about the first week in April, when I remove the chaff, take off the burlap, and corncobs that I use as a Hill's device, replace the frame-covers that are used in summer, and, after seeing that the bees have a queen and plenty of honey for two weeks or more, I dump back the chaff into the winter case to confine the warmth.

About May 1st they are again overhauled, chaff taken off for the summer, queenless colonies requeened or united, when I leave them until May 15., At this visit (May 15) there are generally a few swarms, although not always; supers are added, depending on the strength of the colonies, seldom more than one super per hive at one time.

From May 15th this apiary is generally looked after about once in ten days until October 1st; as it has an almost continuous, light, honey-flow, commencing with soft maple, then in the following order, elm, boxelder, willow, danderion, raspberry, white clover, basswood, mammoth clover, then the wild flowers of the river continue until freezing weather in the fall destroys the last ones—the asters,

This light flow, lasting all summer, makes it necessary to use large hives holding 11 frames 11 x 17% inches. I have 6 and 16 frame hives, but they are not the thing for this apiary.

There are swarms from May 10th until September 1st. I had one new swarm September 1st that built its comb from starters, and gave a surplus of 20 pounds, besides having plenty for winter. This, however, is an exception.

The extracting is done only when the dark honey of fall flowers is likely to discolor the light honey; and I pile on the empties as long as I can; sometimes

nearly as high as a person; but I always place the empty one underside.

When I extract, if alone, I first remove the supers, which are mostly shallow (5½ x 1758 inches outside of frame) by first smoking down the bees, then prying off and shaking the rest of the bees back into the hive, and set the supers upon a wheel-barrow, and wheel the supers directly into the honey house; putting them crosswise of each other so as to give the other bees a better chance to leave; when they fly directly to the windows which are covered with screens, with a bee-escape at the top; and, in a short time, all have left the house.

The uncapping can is set close beside the 6-frame Cowan extractor; combs are uncapped, extractor filled, given a proper speed and allowed to run of itself while another batch of frames are uncapped to again fill it; meanwhile occasionally giving the extractor a few turns to keep up the motion. The honey is drawn off into 5-gallon cans, which cost me less laid down at my station than the supply dealers quote them; and I consider them cheaper in the end than barrels.

Toward evening the empty supers are replaced on the hives, and by morning all are clean and no robbing done.

About October 1st to 10th the supers are all removed from the hives and the bees left a few days to quiet down to their now much smaller hives, the chaff is then replaced on top of frames, after having first placed three cobs on top of the frames, crosswise, for a Hill's device, then a sheet of burlap, and, last, the chaff. They are then left on their summer stands until the following spring with no further care, unless it be to sometimes shovel away the snow from the entrances which are generally left full width.

Each time I visit the apiary it takes from half a day to a full day, seldom more; although seven miles from home, and the roads are sometimes fair, but generally horrible—hills, rocks, ruts,

ditches, sand and mire-holes, as we approach the river.

Chaffing the hives in fall takes two of us one day to fix 100 to 150 colonies.

At the home-apiary two of us chaffed 50 colonies in two days; could do it in less time if necessary.

I sell most of the honey to go to the Dakotas, or to cracker and candy factories, and generally get my pay in advance or on delivery at the station, so I run but little risk.

I make all of my hives at my brother's saw mill. I buy the lumber (pine) by the carload, and get basswood for frames, etc., of them direct, have it kiln-dried and planed at the mill, thus I know what I am getting and can make hives just as good and much cheaper than to buy ready made of dealers. I made 400, onestory, chaff-hives with three shallow extracting supers, chaff-case, double, loose bottom-board with Hoffman frames, complete, in nine weeks; or a total of about 100,000 pieces. This includes planing and kiln-drying the lumber, and counting and bundling ready to haul over country roads to where I live. I had no special hive-making machinery to work with, but would not advise all people to try making hives themselves; as, unless used to machinery they are liable to make mistakes that would be rather expensive; besides, buzz saws are dangerous unless care is used in working with them; but I still have all my fingers, and thumbs too.

RETREAT, Wis., Aug. 10, 1900.



OME FEATURES OF BEE-KEEPING THAT ARE AF-FECTED BY LOCALITY. BY E. S. MILES.

If asked to name the three most important factors in bee-keeping, I would say: locality, the man and bees. I would also place them in the order named. Without the proper locality, that is, a locality supplied with one or more

sources of surplus honey, no man can achieve success in practical apiculture, no matter how perfect his fixtures or how well "improved" his bees. So it behooves everyone contemplating entering the bee-business to ascertain, first, that his locality is thus supplied. It is doubtful if bee-keeping can be made a successful business in a locality having but one source of surplus, no matter how heavy that surplus may be in some seasons; for some seasons it will fail; and, for that reason, we should have two or three sources of surplus. For instance, take this locality: We have three sources of surplus, namely, the different clovers, basswood, and fall flowers. In the eight years I have kept bees here I have never known all three sources to yield in one season, nor have I ever had them all fail entirely in any year. Thus we get some surplus in almost every year; and winter stores, at least, even in the poorest year.

Having decided on a locality, let us next consider how it will influence our management; or in other words, shall we run for comb, or for extracted honey, or for part comb and part extracted? If our main honey flow, that is, the one that is the most sure to yield, and also the heaviest, comes in the fall, or if it is not light honey, we should decide to run for extracted. But if it is white honey and comes at midsummer, or a little before, we may run for comb honev if we so incline. I say if we so incline, because we must have a decided inclination toward any business in order to make it a In discussing this matter of success. locality we are taking it for granted that the person interested is not only decidedly inclined toward the bee business, but desires to shape his management in accordance with an intelligent understanding of his locality.

Another knotty question to many is, the size of hive to use, or, rather, the size of brood chamber, as most all agree that a hive should be expansive enough in the surplus arrangement to hold any crop that is likely to be gathered. I believe

that the size of the brood chamber is directly or indirectly a question of locality. It may be said that the management has a good deal to do with deciding how large a brood chamber to use. This is, no doubt, true, but as our management is largely decided by our locality, or ought to be, it is thus seen that the locality indirectly decides the size of brood chamber to be used.

Then, again, there is reason to believe that locality affects the prolificness of queens; thus, again touching on the size of brood chamber.

Where one is almost certain of fall honey enough for winter stores, and where such honev is good for that purpose, it would seem foolish to use a brood chamber larger than the average queen would fill with brood by the time the main honey flow arrives: and while good authorities have placed that size at ten Langstroth frames, and even more, eight such frames seem to be ample for the average Italian queen in this locality. I have noticed that a good many queens would enlarge the brood nest at the beginning of the main honey flow if given plenty of ready built comb; whereas, if compelled to build in sections, the brood nest would become smaller. Here, again, our locality must be taken into consideration: do we want more brood at this time or not? My friend, you needen't smile if I tell you that that depends on your locality. If you have a reliable source of fall honey you want all the brood you can get up to the beginning of the fall flow; otherwise, we do not care for so much brood toward the latter end of the main flow. To sum up, it stands about this way: If your locality favors comb honey production, and you are inclined that way, use as large a brood chamber as your queens will have filled with brood at the beginning of the flow from which you expect your main crop; and, remember, a large brood chamber of itsetf will not prevent swarming when running for comb honey; but when running for extracted a large brood chamber will no doubt be a large factor in preventing swarming; because, when given plenty of ready built store-comb the bees will not crowd so much honey in below; the queen will be allowed more space to lay in; and, unless a large brood chamber is used, they are on that account apt to be light of stores for winter.

Wintering, too, is almost altogether a matter of locality; some localities requiring no management at all, and others requiring the nicest management of any phase of the business.

Influence of locality! Who can comprehend it all? Touching us on all sides; and scarcely any two seasons alike anywhere. Verily, the man who lives by selling honey needs to be awake in all his faculties; needs to be ever on the alert with a weather eye even on his "locality."

DENISON, Iowa, August 20, 1900.





DAPTABILITY MUST BE
PRESERVED AMONG
BEES, HIVES, LOCALITY
AND MANAGEMENT. BY
G. W. MCGUIRE.

My Dear Editor—What subject of more vital importance could you have placed before the bee-keeping fraternity than that of influence of locality? 'Tis the key to our success or failure. All bee-keepers should know the source from whence their surplus is obtained, the length of the expected flow, and the number of flows expected.

Here among the mountains of Western North Carolina we have but two flows that can be looked to with any degree of certainty. First, poplar, which begins to open about May 20th, and continues about twenty days; second, basswood and sourwood, which begins to open about July 1st, and continues about twenty days. Aside from these we have no certain flow. Sometimes we secure some fall honey in September. The first prime

essential to success here is the condition of our colonies the fall previous. all my colonies intended for comb honey next season to have young, vigorous queens, not over two years old, and either black or hybrid. The pure Italian don't suit me for comb honey. The best honey gatherers for our native flora is a cross between the German and the Italian. I would prefer the mother to be pure German. The Germans seem inclined to look ahead and hold some stores in reserve, which are so desirable in our stormy, varying spring months. German mother seems to impart this very instinct to her offspring. Their comb building capacity is unquestioned. While the Italians go ahead with such enormous proportions in brood-rearing in late winter and early spring, that frequently their immense stores are consumed and they succumb to their fate long before a blossom is seen in the spring.

The hive I have been the most successful with is a modified Heddon, holding eight closed-end frames, six inches deep, the length of the L, made to hang in a rabbet like the Hoffman. We use a follower and wedge to press the little frames close together. Two of these sections form the brood-chamber.

We want the bees to have the upper section solidly filled with choice honey and sealed at the approach of winter. The under section we want empty. To accomplish this, when our last honey flow is in progress we go to every hive and lift up the upper section, and, after smoking the bees vigorously, which causes the queens to run below, we slip a queen excluder between the sectious of each brood chamber. The result will be, very little honey below the division, and the upper part will be solid with choice honey. This excluder must be taken out before winter, as the bees would follow the honey up and leave the queen to die.

Here in this latitude we don't need any cellar or winter repository or spring packing. We want just a plain board for a cover, cleated at the ends, and allowed to be glued down perfectly tight, and the rear end of the hive elevated about two inches. I would not give two cents to have such a colony insured. The bees should invariably be let alone till the following spring. When spring arrives we should bend our energies and make preparations for the early crop. All our strong colonies will probably need two boxes: our medium ones will need one. Our weak colonies will only get in good trim for basswood. When the early harvest is past we should take all the sections, and extract from the unfinished ones, as poplar is a dark honey and should be harvested to itself. We now get ready for the white flow from basswood and sourwood, which will probably last about twenty days, and our harvest will be past.

DARK RIDGE, N. C., August 10, 1900.



OME INFLUENCE OF LO-CALITY, BY W. A. H. GIL-STRAP.

Rd. Review—In the July Review you ask for articles on the influence that locality has on apiculture. It is evident that you want only a few pointers; for, to give an exhaustive treatise on the subject, would render it necessary to attach a modifying clause to nearly all literature pertaining to bees.

At first thought it appeared that Editor Hill was the right man to write on the subject, but he may be too busy looking at the country and running bees somewhere. But, in a country like California, which is a large Palestine—an epitome of the world—it is unnecessary to go farther to see that localities differ much in character, capabilities and necessary plans of management.

A honey producer once wrote to a bee paper that queen excluders should be kept in use throughout the honey season, when producing extracted honey; and said it was not a question of "locality," as he had demonstrated in several States, California included. It was very clear to me that in the Sun Joaquin Valley, the central part of this State, he would soon quit the use of excluders, as advocated in his article, for the loss by their use would be considerable every year. A man now in this valley says that queen excluders were a great help in the sage country, but here he cannot use them, as the flow is usually light at the start, and the bees will not carry the honey up through the excluder as they should, but store in the brood nest.

Where sage is the main source it is frequently desirable to get colonies strong early in April. "The early bird catches the worm." Where our surplus is from alfalfa, the middle or last of June is plenty early enough for colonies to reach full strength. In many localities the honey flow is preceded by a "starving spell" of two or four weeks, and this follows a spring flow which is strong enough to promote swarming, but not sufficient for surplus. This year I made a correct prediction of little or no swarming on account of the season being so far advanced that the spring flowers would be gone before colonies could get strong.

The question of comb versus extracted honey production is mainly one of locality. In a locality of dark honey and remoteness from market few would handle sections. If the honey is very dark, a pretty steady flow, and near transportation lines, the question opens about queen rearing instead of even extracted honey. Of course, it is hardly conceivable that a successful queen breeder would sell no honey, but my reference is to his main efforts.

The question of locality is of more consequence in disposing of the crop than many suppose. That one reason bars us from receiving as much for our honey in California as would be considered a fair price in the East. As I am located, it is better for me to consign my honey than to dispose of it in any other way. In

some localities it would be better to peddle the honey; in other localities to sell at wholesale. Of course, some consider it a financial sin to consign. This is mainly a matter of locality.

Locality may not have as much to do with hives as some suppose, and it may properly be more a question of management. If the locality demands a larger hive than the Draper barn, why not use a Heddon or Danzanbaker hive? They are large enough for Cuba and small enough for Michigan; large enough for July, and small enough for December. You, Mr. Editor, prefer a Heddon hive in Michigan, and Mr. Martin prefers the same in California. Exchange localities and you would doubtless each keep the same hive, but vary the management to suit the locality. The largest single lave record, in a single crop, that has come to my notice from the Northern States, was by G. M. Doolittle, 506 pounds; the largest hive record in this valley was by L. E. Flory, Lemoore, 666 pounds; the largest apiary record in the world was by II. Peterson, Wattle Flat, N. S. W., Australia. From 63 colonies, spring count, he increased to 120 and extracted 48,000 pounds, or 761 pounds each for spring All these record breakers are from Long-Idea hives. This confirms my opinion that a hive that is good for extracting in one locality is also good in other localities for extracting, if managed to suit the conditions where located. But the bulky comb honey super that would do tolerably well in one place, might be a signal failure elsewhere. Perhaps the markets of different localities will prevent any section arrangement from being best everywhere,

Perhaps the best plan generally for a beginner in a given locality is to adopt the appliances and methods that are most successful there in other hands. If something else seems better adapted to his locality, he might adopt the change to the extent that if it proves a complete failure it will not seriously cripple his business.

GRAYSON, Cal., Aug. 13, 1900.

NELUENCE OF LOCATION. BY ADRIAN GETAZ,

(The Prize Article.)

Three times, since I began keeping bees, the discussion of large versus small hives has been commenced in the bee papers, kept up a year or two,



and then dropped; only to begin again two or three years later. Each time the same arguments have been presented by substantially the same writers. Each time the conclusion has been reached that it was a matter of

"locality;" but why some localities require a certain method of management, and why some others require a different method, has not been explained. Why does Dadant's locality require large hives and correspondingly large colonies? Why does Doolittle's locality need small ones? What influence has the more or less successful wintering due to the climate, upon the condition of the colonies in the spring and the subsequent management? What management is required for a short, heavy, flow of honey, and what for a long, light flow? What for localities having a fall flow, etc?

All of these points should be thoroughly investigated and understood. We should be able to say: A given locality of such and such climate, honey-flow, etc., requires such and such management; and we ought to be able to explain πchr .

I can only describe the characteristics of East Tennessee, from an apiculturist's standpoint, and explain how these conditions brought me to my present ideas on the subject. I may add that I am writing from the standpoint of a comb honey raiser.

Beginning in the spring of the year, we may say that our honey flow, or

rather our honey season, begins about April 1st, and ends about the middle of July. But it is by no means a continuous flow. In April, fruit blossoms; in May, after an interruption, tulipwood. another interruption until the persimmon flow comes in June; then basswood and sourwood during the latter part of June and July. Basswood is found only away in the mountains; there is none here. Some white clover bridges more or less the interval between fruit blossoms and poplar, but not enough to be depended upon for surplus. Occasionally there is a heavy flow of honey dew during May and June; generally of a tolerably fair quality, but sometimes abominable in taste and color.

What increases the difficulty is the irregularity of these different flows. Often the fruit blossoms and poplar flows are interferred with by bad weather. Sometimes there is honey dew; sometimes there is none. Sometimes the sourwood yields, and sometimes not. The persimmon has never failed yet with me, but there are only a few trees here and there, and the period of blossoming is very short.

There is absolutely no way to tell in advance which of these sources will yield, and which will not; so the only chance to secure surplus is to keep the colonies strong during the whole season (three months and a half) so as to catch whatever flow may happen to come. I am speaking for Tennessee generally. In my immediate neighborhood there are very few tulip trees, and no lindens.

Needless to say, that a management similar to the one advocated by friend Doolittle and others would be a failure; for the flow for which they would build up might be the very one that would fail. In fact, I tried once to build up my colonies very, very strong for the sourwood flow, when lo and behold, that flow failed completely!

To keep colonies of bees in full strength during three months and a half, it is necessary to control swarming; otherwise both the mother colonies and the swarms would be too weak during the remainder of the season.

This is one of the reasons which prompted me to adopt large hives. I had some correspondence with the Dadants on the subject, stating that there was no demand for extracted honey here, and they advised me to build up a home market as they have done. Unfortunately, the bulk of our honey is dark, rather inferior in quality, and varies greatly both in taste and color. To build up a special home market, at advanced prices, it is necessary to have first-class honey.

Preventing swarming can be accomplished only by caging or removing the queens at the proper time. This, however, entails quite a loss of brood; as the bees must be at least four days without unscaled brood.

Those four days or more without brood are the key to success. After the bees have begun to build queen cells they will continue as long as there is unsealed brood and the conditions of honey flow, temperature, strength of colony, etc., are After having been without favorable. unscaled brood a few days they will not resume cell building; at least, not for quite a while; generally the remainder of But, as stated above this the season. entails a loss of brood. With me, the swarming takes place in May. The brood lost at that time is precisely what would furnish the field bees for the sourwood flow in July. So it becomes necessary to reduce that loss to a minimum.

By using large hives, putting on supers early, and protecting them against the cold nights so that the work goes on in the super day and night with no interruption, using bait-sections, shading the hives in hot days, etc., I have, for the last six years, succeeded in reducing the swarming from five to fifteen per cent of the number of colonies.

Under such circ instances, rather than to requeen throughout, I let the colonies swarm; catching the queens in the traps, and returning the queens, or giving the colonies others after they have been a few days without unsealed brood; or I let them have queens out of the cells they have built. If, occasionally, in examining the colonies, I find cells started, I treat them the same way without waiting for actual swarming.

Between the honey season and the winter there is a little nectar gathered every day, except in very dry seasons. That quantity increases materially when the goldenrods and asters bloom, but there is never enough to furnish any surplus, and very often not enough to winter the colonies.

During that period there are plenty of weeds and flowers of all sorts along the fences and in the fields after wheat and oats are harvested, in the pastures and other places; but they yield very little honey; and, as a rule, only in the early morning. This must be due to the fact that the ground is too dry to admit the formation of the nectar, for, occasionally, if an abundant rain comes, there is something like a flow of honey for a few days after.

The result is that the more bees there are in a colony, the more flowers will be visited, and the more honey brought in; in fact, while the strong colonies will gain some in population and stores during that period, the medium ones will only sustain themselves and the weak ones will lose, if they don't get robbed by the others, which happens occasionally. The result is that, by the time winter sets in, the difference between the large and the small colonies will be greater than it was at the close of the honey harvest.

During the winter the difference becomes still greater. The strong colonies will eat proportionately less, lose a less percentage of bees, rear some brood, and when spring comes they will be very much stronger in proportion, begin brood rearing in earnest much sooner, and be ready to enter the surplus apartments in full force long before the weaker colonies.

can even recover their lost strength. Do you wonder that I am such a strong advocate of the large hives and larger colonies?

If this state of affairs were a purely local one, I should not have written this contribution; but it applies in its main characteristics to the whole country south of the Mason and Dixon line, except Florida; there are differences, of course, between one locality and another. The further south we go the shorter is the winter. Then, below this section there is the cotton, while, on the other hand, the sourwood does not exist in the low plains. But, nevertheless, the general features of the Southern States' honey production remain the same. A few months of honey season during which nectar can be gathered from different sources, but in a very irregular manner, some sources yielding this year, and some other yielding the next year, necessitating the keeping up of the colonies to their full strength during several months. Then the late summer and fall season, with very scant yielding of nectar, during which the strongest colonies have a decided advantage over the others.

Other sections of the country are under different conditions. In the Northern States there is a definite honey season of a few weeks from white clover or basswood, or both, the swarming taking place at the beginning of it. Some of these have, besides that, a honey flow from buckwheat later in the season; and, in a few localities, there is also a fall flow of considerable importance.

In Colorado and other Northwestern States, they have two distinct flows. Through some correspondence with a prominent Colorado apiculturist, I have learned that one difficulty with them was that during the first honey flow the bees were filling the brood-nest with honey and curtailing the brood, with the result that at the time of the second flow, the number of field bees was considerably reduced.

Some portions of California seem, on the other hand, to have a long, continuous flow, with the swarming taking place before the flow opens.

I have done my part. Now, if others in different localities, will do the same, we will eventually have the matter fully understood. No better paper for that purpose could be selected than the Review.

KNOXVILLE, Tenn., March 8, 1900.



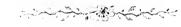
OTH HIGH AND LOW LAND NEEDED IN THE IDEAL LOCALITY. BY J. F. GALLIGAN.

Proximity to water and strong vegetable life are the essentials in bee pasturage. These are the first things to be considered in locating an apiary. I have always found the most prosperous colonies on elevated ground overlooking some fertile valley. Here they gather honey from the high ground in spring, and, in the fall, secure sufficient nectar for winter from among the entwining vines of the lowlands. Of course, every country and place have their drawbacks, but I believe, other things being equal, this to be the best location an apiary can have.

But the wintering and improvement in bees is the hardest problem to me in apiaculture. These two you will find go hand in hand. Cellar wintering practiced by so many, and thought to be a solution of the whole problem, is nothing but a long stride in producing a worthless, weak and delicate strain of bees. Too much care in the apiary will bring out the same bad results it has in the improvement of animals. To secure a start in standard bred stock, we must build them a residence almost equal to their master's; protect them from the sun, and keep their feet as dry as an invalid's. If they were turned out to the mercy of the elements, nine in ten would not survive one year. Who wants a strain of bees of this caliber? I am sure they would be of no use to anyone.

For my part, I believe in wintering on the summer stands, with slight protection. We have practiced this way of wintering successfully for thirty years, and think it to be the best; in fact, the only way to produce a hardy, strong and vigorous strain of bees. To attain this end should be the aim of every beekeeper; for in these are our only salvation. We need something that will stand the blizzards of the Dakotas, or prosper in the damp and sultry clime of Florida.

SHEPARDVILLE, Ill., Aug. 18, 1900.



NOW YOUR LOCALITY,
AND ATTEND STRICTLY
TO BUSINESS. BY H. D.
BURRELL.

One of the main factors of profitable bee-keeping is a thorough understanding of the capabilities and peculiarities of the location where the bees are to be kept. Often a difference of only a few miles between apiaries makes necessary an entirely different management. The importance of this matter has been impressed upon my mind by costly experience. Perhaps a few items from that experience may be helpful to some brother bee-keeper.

In the twenty-five years I have made a specialty of honey production, we had homes or out-apiaries in eleven places. Had I thoroughly known those different locations at the *beginning*, many mistakes could have been avoided, and the bank account would be more satisfactory.

Once we lived at Bangor, Mich., about ten miles from the lake. Raspberries, whitewood, white clover and basswood were abundant, and, until the insatiable saw-mills devastated the forests, good crops of fancy comb honey could be secured every year. In those days it sold readily for 18 to 25 cents a pound, wholesale, while extracted honey sold for only

5 to 8 cents. Careful experiments demonstrated that in that locality only about one and one-half pounds of extracted honey could be raised to one of comb, and of course all our hives and management were arranged for producing comb honey. Some years ago it seemed best to move to our present home, in the great fruit belt, close by old Lake Michigan, where there are frequent cold winds, mists and fogs, and cold nights are the rule. The natural timber has been nearly all removed, and fruit-growing is the main industry. As but little stock is kept here, there are few pastures. little clover grows, and there is no bass-The only source of honey to wood. speak of is from fall bloom, from which the flow is short but usually abundant. An average colony weighed yesterday (September 7), showed a gain of 1013 pounds for the day's work. The hives were arranged for comb honey production, so we tried to raise that, but the end of the first season found us with a small crop of dark, cheap, comb honey. The cold nights drove the bees from the sections, and they were slow to return. short season left many poorly-finished sections; and the nights were too cool to make it practicable to have them finished by feeding back.

At Bangor it was necessary to get colonies built up strong early for the raspberry and clover harvest; here it is just as well if they are strong by August 15th. Here, at least three pounds of extracted honey can be secured to one of comb honey; and, of late years, extracted brings nearly as much as comb; so we now raise only extracted. Of course, it took time to learn these things. It would have been worth considerable to us had I known them at first.

How best may we thoroughly learn the characteristics of localities? In the first place, make a thorough study of all its features. Observe closely, and keep careful records of everything; know when bees commence to work in the spring, and what they are working on; know the

flora of the locality, and the average time of its bloom throughout the season. think it was Bro. Doolittle who told us years ago about following his bees to the fields to see what they were bringing honey and pollen from. Know what blossoms are abundant enough to yield a surplus, and so manage as to have hives overflowing with bees at the right time to make it count, and be sure and "have the dishes right side up when it rains honey." It helps greatly in arranging work to weigh hives daily in the working season, and it is better to weigh several than one. The swarming fever, loss of queen, or some other unforseen cause may throw one colony off the track. I have used with much satisfaction a device for weighing which sits on three legs, and, with short ropes and suitable clamps, suspends and weighs a hive while it hangs on oldfashioned steelyards. The machine is light and easily moved from one hive to another, and a hive is easily raised by turning a crank, in the same way that a well bucket is raised from a well. If the honey flow is commencing and likely to be abundant, we know how much room to give, and how little room, or none, if the flow is drawing to a close, as the weight record and our knowledge of the flora will readily indicate. If the honey flow is short, it is best to so manage as to have no swarming at this time. The surest, practicable way to do this is to have a young, prolific queen of the current season's rearing in each honey hive. This is readily accomplished if the flow is late. If very early, perhaps the best way is to get queens from the South. If the honey flow is long, swarming is all right, with good management.

Enter upon this work with a firm determination to succeed, and leave no work undone, to accomplish the object—go to the foundation of the matter and scrape the roots. Have faith in your business and yourself. Half-hearted methods won't win best results with bees, or anything else.

SOUTH HAVEN, Mich., Sept. 8, 1900.

OW ONE MAN UNDERSTANDS HIS LOCALITY.
BY JOHN H. RISING.

Perhaps it was as well to express this subject as "Locality and Its Influence on Bee-Keepers." Anyone keeping bees and not being adequately informed as to his *locality* will soon cease to keep *bees*. This matter of locality is of prime importance also in deciding whether to produce comb or extracted honey, or both. In my present location, South New York, both can be produced much cheaper than either alone. In Cuba and Havana extracted is the only honey that can be produced satisfactorily.

In this locality out-door wintering is cheapest and best, although some sort of protection is necessary. Early flights, so essential to early brood-rearing, are thus obtained.

Divisible brood chambers with closed end frames are best for wintering as well as for building up in the spring.

Use plain sections with fence separators to get most comb honey in marketable shape. Extract most dark grades of honey.

Italian bees are generally preferable for extracted honey, and Hybrids (Italian-black) for comb honey.

In Cuba I should corral some of the Spanish bees so common in the forests. The stingless bees are of no use. The "I," hive is best for Cuba as well as Hawaii. Its size from 10-frame up.

In this section spring feeding is not necessary or desirable. Apple bloom from April 25th to May toth is all the spring feed necessary. There is usually some honey earlier from popples and maple and colonies should be in good shape at the close of apple bloom. In Cuba "summer feeding" is sometimes necessary.

All colonies should be in fine shape for white clover, which blooms during June and well into July. The surplus receptacles should be put on as soon as the brood combs begin to whiten along the

top-bars. As soon as basswood bloom is past, usually July 15, remove all surplus receptacles and extract, or remove finished sections. Return unfinished sections to be filled if you are running for comb honey. In this section buckwheat blooms from August 1st to 25th and is usually the best flow we have. Buckwheat honey sells well in the comb in the eastern markets. It is usually finished and capped so quickly that the comb is of that crispy freshness so desirable and finds ready sale. Many people call for buckwheat honey, prefering it to basswood, hence it is more profitable to run all colonies for comb honey during the buck wheat flow.

It is always best to shade the hives with shade boards during the summer season. I would also have a few small trees in the apiary. Have the apiary in a valley or low place. It is easier for the bees to fly down hill when loaded and will result in a larger yield of honey. Bees invariably fly up hill when going after honey, provided they can find it in that direction.

GASKILL, N. Y., August 30, 1900.



FASTENING STRUS in the no-drip case is important. If left loose, they slip around and get the sections out of place and cause them to be damaged. This is the report of commission men at Chicago.

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"VERY ESSENTIAL" is the advice given on page 251 regarding the feeding of a colony for three days after releasing the queen. Mr. Johnson writes me that this emphasis should have been put upon the second smoking of the bees three-fourths of an hour after the queen is released, instead of upon the feeding.

DR. MILLER and Manager Secor were sadly missed at the Chicago convention. The death of a near relative prevented the attendance of the doctor. What kept Bro. Secor away I do not know.

MR. GRABBE of Wisconsin, remembered the bee-keepers at the Chicago convention by sending them several big jugs of his famous mineral water. It was "on tap" during most of the sessions.

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SITTING DOWN was recommended by R. L. Taylor at the Chicago convention. In response to a question of whether one could afford to sit down while working over a hive he said, "I think one can't afford not to sit down."

Unripe, extracted honey received a most severe, but most just, condemnation at the Chicago convention. It ferments, it sours, it bursts tin cans or iron-bound barrels, and it utterly disgusts all who buy it. One dealer said that there was nothing that had ever injured the market for extracted honey to the extent that it had been injured by unripe honey.

Drones are too much neglected by queen rearers and bee-keepers generally. This was the opinion of Mr. C. A. Hatch at the Chicago convention. He said if he wished to make any change in his stock he found he could do it much quicker through the drones than through the queens. All stock breeders recognize that prepotency is on the side of the male.

ENTRACTED HONEY, according to Mr. Bishop of Milwaukee, was sold more largely to those who wish to use it for a table sauce; while Mr. Weber of Cincinnati, Ohio, sold three-fourths of his honey to manufacturers. E. R. Root explained that Mr. Weber's honey was largely from the South, and was dark, while Mr. Bishop's trade was largely of white honey.

SMOKE does not seem to affect honey in the blossoms even in a very smoky city; but when there is a drouth of two weeks or more the flowers in the city become dusty or dirty to such an extent that the bees become soiled, so to speak, in working on the dirty blossoms, and cause the combs to become badly travel-stained. This was the report given by Mr. Purple of Chicago.

Law made easy for the people in one small volume should no more be expected than bee-keeping made easy in six short lessons, said Mr. H. F. Moore at the Chicago convention. Don't dash recklessly into law, and then hire an expensive lawyer to help you get out of trouble. Better pay in advance for some good advice on any given doubtful point. Bear well in mind, too, that laws protect best those who don't go to law. Big corporations pay large fees to lawyers to keep them out of the courts.

PACKAGES for shipping extracted honey were discussed at the Chicago convention, and it is very evident that there is no one package that is best for every shipper. Barrels are certainly much cheaper where they can be secured near home. Basswood barrels with oak heads and wooden lioops give the best of satisfaction in Wisconsin, but it would not pay to ship them out to Arizona. For shipping honey from the far West, boxed tin cans seem to be the best package. If any one thinks that tin cans never leak they are mistaken. When in Chicago I was shown a large shipment from Texas, and the cans were leaking. Some were turned upside down, some laid on their sides, in an endeavor to get the leak uppermost. The honey could not be re-shipped on account of the poor condition of the cans. I am not opposed to the tin can. It is a good package in its place. So is a barrel. Neither is faultless. The shipper should learn which is the better for him to use, and then use it.

E. R. Root was re-elected as President at the Chicago convention, and Dr. Mason was served the same as Secretary. R. C. Aikin was elected at Vice-President. The choice for the place of holding the next meeting lies between Buffalo with the Pan American and Niagara Falls as attractions, and Denver with the low rates that will be assured with the meeting there of the G. A. R.

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THE CHICAGO CONVENTION was well attended. I didn't count the members, but Bro. York says in his paper that there were fully 350 present one evening. I presume that some of these were Chicago bee-keepers and their friends. In the group that I took one afternoon there were about 175, but I am satisfied that quite a number were absent at that time. The hotel accommodations were good. cago can always take care of a crowd. The hall was conveniently located. only drawback was the difficulty of making one's self heard in the hall. room was large, and the heat necessitated the opening of the windows through which floated in the evidence that we were in Chicago - that noisy, bustling metropolis of the West.

RETAILING EXTRACTED HONEY.

E. R. Root, President of the convention recently held at Chicago, urged the importance of developing the home-markets for the sale of extracted honey. He deplored the sending of large quantities to the cities, where it is adulterated, and palmed off on the unsuspecting public. A number of prominent producers are now bottling their own product, and putting it on the market of their own vicinities, under their own name and guarantee. The fact has been demonstrated, over and over again, that the general public will pay a good round price, providing that it can be assured that the honey that it is buying is pure bees' honey, and that the bee-keeper or person putting it up is reliable and honest.

SEI,LING HONEY.

Mr. Herman F. Moore, at the Chicago convention gave very nearly, if not exactly, the advice that I gave last month in regard to sending honey away to distant markets. Among other things he said: "Be methodical; have your bargain in writing; save the envelope covering the correspondence; look up the standing of the purchaser in Dunn or Bradstreet; write a personal letter to a banker, enclosing a stamped envelope for a reply, asking about the party. This one precaution, that of asking a banker for the name of a reliable dealer, would almost entirely prevent loss. To sell goods on commission and not pay for them is larceny. If honey is sold direct, the dealer may say that collections are bad, or he may go into bankruptcy."

SHIPPING OUEENS successfully by mail is quite a knack. At the Chicago convention, Frank Benton put some stress upon the packing. The center apartment ought to be well shut off from the rest of the cage. The outer hole should be well ventilated. In cold weather the bees can cluster in this inner darkened chamber. In warm weather they can go out into the ventilated apartment. Most manufacturers make the holes interlap or cut into one another. This ought not to be. The wood should not be cut out between the different apartments, simply a small hole made to allow the bees to pass. Inside of the fool apartment should be waxed to prevent the honey soaking into the wood. Too many bees with the queen is worse than too few. A dozen bees is a great plenty in the warm weather:

THE LAWS of one State have no binding force in other States. This was pointed out in the address of Mr. H. F. Moore at the Chicago convention. The only bearing that the Arkansas case regarding bees as a missance has in Illinois is that courts generally respect the decisions of sister States in any matter that

has not been adjucated at home. The excellent foul brood law in Wisconsin does not help the bee-keepers in Illinois. Mr. Moore said that if the thousands of bee-keepers in Illinois had unitedly asked for such a law it would have been on the statute books ere now. Mr. John M. Rankin told me at the convention that the Michigan foul brood law was killed, not by Mr. Harmon Smith, but by the apathy of bee-keepers. Laws are seldom passed except at the earnest and continued solicitation of a large number of people.

PERFERENCE

INCREASE IN BROOD DISEASES.

At the Chicago convention, President Root called attention to the increase in brood diseases among bees. Both black brood and foul brood are certainly making advancement in certain portions of the country. A few years ago, if he received, at the home office, more than one sample of diseased brood in a month, it was considered something remarkable now specimens are received almost daily. Black brood, which Mr. Root regards as more insiduous than foul brood, and more to be dreaded, is thought by some to travel through the air. The President doubted this, but was compelled to admit that it traveled much more rapidly than foul brood. The prompt, energetic measures undertaken by the State of New York should be recognized by bee-keepers in every State in the Union; for without such prompt action, bee-keeping may be almost entirely wiped out of some important sections in other States, as it is already in some localities in New York.

INTRODUCING QUEENS BY THE USE OF TOBACCO SMOKE.

At the Chicago convention it was asked if any one present had had any experience in using tobacco smoke for introducing queens, and there was no response, except some one, I think Dr. Mason, said: "We don't use it." It

would seen from this that it has not been very generally used.

In this connection, I might say that Mr. John McKeon of Dryden, N. Y., has sent me a private letter written him by Mr. J. P. Moore of Kentucky, in which I find the following:—

"I have found by experience that a colony which has been queenless about five or six days, is the easiest of all to which to introduce a queen. To introduce a queen to such a colony, all I do is to lay the cage at the entrance three or four hours before sundown, and then about sundown, or about dark, funnigate them with tobacco smoke, and let the queen crawl into the entrance, puffing in a little more smoke after she crawls into the hive. This has proved the surest method I have tried. I have yet to lose my first queen, where the colony was queenless not less than five days nor over seven days."

HAMAMAMAKKK

CO-OPERATION IN SELLING.

If there is any one thing in which beekeepers can combine or co-operate to better advantage than another it is that of selling honey; especially when there is a class, or bee-keepers of some particular locality, with similar crops and aims. At the Chicago convention a paper was read from S. A. Niver, on the subject of selling honey, and from it I copy the following paragraph:

"Six years ago a number of honey producers of Groton, N. Y., believing it better to combine than to compete, pooled their interests and sent the writer of this article, 'armed and equipped, as the law directs,' with sample case and power of attorney to the grocers in the cities reached by our line of railroad, to sell and collect for all, and divide the expenses in proportion to the amount sold for This arrangement has worked so each. satisfactorially that it has been followed each year since, with growing acquaintance and mutual dependance between our customers and ourselves. True, there are some drawbacks to this method, such as bad debts, much bookkeeping, owing to large number of small sales, and length of time it takes to get collections in and distributed, but the net results in prices and security has, on the whole, been very satisfactory."

HEES FOR BUSINESS.

In his address at the Chicago convention, President E. R. Root said that too much attention had been paid to the breeding of handsome bees—bees for color. We should work to develop a strain of bees with longer tongue—long enough to work on red clover. The matter of shortening the corolla-tubes of red clover ought also to receive attention.

THE STEREOPTICON feature of the Chicago convention was a very enjoyable part of the meeting. When we have steady discussion from morning until night, something of a different nature is a welcome change. Perhaps 200 pictures of apiaries, bee-keepers, implements and parts of the bee were shown, accompanied by appropriate remarks. pictures were perhaps fifteen feet in diameter. Most of them were bright and clear and reflected credit upon Bro. Root in this his first attempt at lantern slide making. I took with me the materials and paraphanalia for developing a plate in my room in the evening, and the next day the negative was taken to the McIntosh Co, who made a slide from it, and the next evening it was the last picture thrown on the screen—the picture of the members themselves as they had gathered in a group the day before.

CHICAGO CONVENTION PHOTOGRAPH.

It is seldom that so many prominent bee-keepers are gathered together as were present at the Chicago convention; and, in making a photograph of so large a group I have never succeded so well as I did in this instance—of the 175 faces every one stands out bright and clear and easily recognizable. The picture is 8 by 10 inches in size, printed on Aristo Platino paper which has a matt surface and is absolutely fadeless, and mounted on a heavy, carbon-black mount. It is suitable to be framed and hung in the home of any bee-keeper as a momento of a pleasant gathering; besides furnishing

good portraits of a large number of beekeeping friends.

Photographic supplies have advanced in price to such an extent that I shall be obliged to ask 75 cents for copies of the photograph; but no one need send any money until he has first seen the photograph—and not then unless he is satisfied with the picture. Simply send me a postal saying that you would like to see the Chicago convention photograph, with a view to buying it if it suits you; and upon receipt of the card, I will mail you a copy of the photograph. If it suits you, you can send me 75 cents. If you are not pleased with it, you can return it, and there will be no charge.

CO-OPERATIVE ORGANIZATION.

At the Chicago convention Mr. R. C. Aikin read a most excellent paper having the above title. The greatest need of cooperation is in the selling of honey. This is especially true with small producers who are a long ways from some desirable market; the local freight rates practically prohibiting the shipment of small lots to a distant market. The trouble is that honey producers are so scattered, and the product so limited in a given locality, that there is no inducement to put in proper facilities for handling honey as there is for the handling of grain. Small producers of honey are often poor and compelled to sell, and the result is that the market price is lowered. If a large producer attempts to buy up the small lots he soon finds that it does not require many small lots to make them cost hundreds, or even thousands of dollars. In short, even the large producer "has troubles of his own." He must struggle to keep from being eaten by still larger fish. What is needed is co-operation; the facilities for gathering the product and relieving the small producer by paying him for his honey and wax. These facilities must reach out from some central point, yet come close enough to the little apiaries so that their product may be delivered to the buyer with the minimum of freights. Such a system is very much needed, but the solution of the difficulty is not clear. Many difficulties lie in the way; yet there are none that may not be overcome.

When bee-keepers are fully organized in a co-operative way, the head National office will know what is being done in the north, east, south and west. The sub-offices will know what is known at the head office. There is never over-production, but there is *lack of distribution*.

BEE-KEEPING AS A NUISANCE.

Mr. H. F. Moore of Chicago, in his address, at the recent National convention, on "Bee-Keepers' Rights and Their Protection by Law," said that in the minds of most people who don't keep bees, and know nothing of their habits, there is an insane fear of a bee sting for themselves or their children. A bee-keeper settles in a neighborhood, and makes no efforts to make himself agreeable, or to show his little pets and their harmless ways. If a child or an animal is stung, the neighbors instantly put on their war paint, and yow the banishment of bees and bee-keepers from that neighborhood.

Nearly all of the prosecutions of beekeepers have been on the ground that bee-keeping, of itself, ipso facto, is a nuisance, and to be abated, as a matter of course. In such cases, bee-keepers have been almost universally victorious. Beekeeping of itself is not necessarily a nuisance, but may become such by an objectional method of management. So, too, may hogs, dogs, horses, cows, etc., become nuisances by an objectionable manner of caring for them. The supreme court of Arkansas has decided that "Bees may become a nuisance in a city, but whether they are so or not is a question to be judicially decided in each case."

For a dozen years I have kept bees in the city of Flint, and not one word of complaint has ever reached my ears. The neighbors have kind feelings for me and for my bees. I have been very careful not to handle bees in the middle of the day when there is a scarcity of nectar; such work being done just at dusk when the bees will not fly far from the hives. and robbers will not trouble; and by the next morning all is quiet. Of course, a large apiary could not well be managed on that plan, but I think that near the streets of a city is not the proper place for a large apiary. An apiary in which work must go on regardless of cross bees ought to be isolated. Of course, tall trees or buildings between the apiary and the street do much to bring about this needed isolation. The one thing needed in all this matter is a little common sense.

BREEDING FOR LONGER TONGUED BEES.

At the Chicago convention Mr. John M. Rankin of the Michigan Agricultural College read a paper upon the breeding of bees for longer tongues. So long as the mating of queens is the haphazard affair that it now is, this is a very discouraging problem. Mr. Rankin firmly believes that it would not only be possible, but comparatively easy, to breed bees with longer tongues if there were some way of controlling the mating of the queens. He has tried the plan of clipping the tips of the queen's wings to curtail their flight. He has clipped off all the way from a hair's breadth to one half of the wing, but out of 65 thus treated, only one mated. He has also tried the plan of putting the nucleus containing the queen, and a full colony with drones, in the cellar until late in the afternoon when the other drones had ceased flying, when these confined bees were given their liberty, but his success with this plan was no better than with the clipping of queens' wings. The plan that had given him the best satisfaction was that of keeping a colony with choice drones queenless until the close of the season when the other drones were killed off. If this colony is kept in the same yard with the others I should not put any great faith in

this plan, as drones driven from a colony having a queen are quite likely to take refuge in a queenless colony if one can be found. If a certain, practical method of controlling the mating of queens could be discovered it would rank with comb foundation, the honey extractor, etc. Even if this plan of keeping choice drones late in the season answered the purpose, there is the drawback as pointed out by Mr. Rankin, that we can make only one cross in a season. The hopefulness of this problem in one direction is shown from the fact that Mr. Rankin found all of the bees of the same colony to have tongues of the same length, the difference of length of tongues being seen in comparing one strain of bees with another.

Mr. Rankin also urged the importance of working at the other end of the problem, viz., that of developing a strain of red clover having shorter corolla tubes. As showing the difference existing in clover he quoted Dr. Beal as saying that "A field of clover represents as many and as varied types of the same specie as would a field of corn planted from a mixture of all the known varieties."

VARIOUS FORMS OF DISEASE AMONG BEES—CAUSE AND CURE,

Dr. Wm. Howard contributed to the good things of the Chicago convention by writing a paper upon the above subject. Like the paper of Mr. Cowan, it is very difficult to condense. The best that can be done is to mention some of the most prominent points. So far the doctor has not been able to isolate a single species of bacillus that would infect a prosperous colony with paralysis or disentery. Black brood, pickled brood, disentery and paralysis all disappear during a good honey flow. "In fact," says the doctor, "during a good honey flow, with a prosperous colony and proper sanitation, it will be found difficult to infect such a colony with any disease, and obtain immediate. disastrous results," Combs which have had any disease in them, whether of fungus or bacterial nature, are never entirely free from infection. Many cells may be free and safe, yet, as a rule, there are lurking spores capable of reinfection.

One experiment made by the doctor is worthy of mention. Two colonies last spring contained black brood that was well developed and thoroughly established, yet it entirely disappeared during the spring flow from horsemint. They became strong, and one swarmed, giving off a good swarm, which was hived on infected combs left over from a colony that had perished from black brood. No disease appeared in this hive. With a cessation of the flow in July came a reappearance of the disease. A fall flow came in August, when the disease again disappeared.

The doctor says that he has been unable to find any valid evidence for holding the queen responsible for, or that she has any influence upon, the perpetuation of any disease with which he is acquainted. The statement of Cheshire that the spores of foul brood had been found in the undeveloped egg, the blood of the queen and the spermatozoa of the drone had not been verified by the doctor. So far as the doctor knew, it had not been verified in any other justance.

REKERKERKE

THE CHEMISTRY OF HONEY AND HOW TO DETECT ITS ADULTERATION.

The above was the title of an excellent paper furnished the Chicago convention by Mr. Thomas W. Cowan. It is one of those papers of which it is almost impossible to make a digest—you need to read the whole paper in order to get the full benefit.

I will try, however, and notice a few of the most important points. Bees do not gather honey. They gather nectar and transform it into honey. Nectar consists almost entirely of cane sugar. Honey is essentially a product of the bee and not of the flower which it visits. After nectar is gathered, and before it is stored in the combs, it undergoes a

change, and the cane sugar is transformed into two other sugars — grape sugar and fruit sugar. This transformation is brought about through the action of a secretion produced by glands situated in the head of the bee, and is similar in operation to saliva in a human being. I might say, parenthetically, that, later in the day, after the reading of this paper, the discussion of feeding sugar for winter stores came very near precipitating a discussion of that old, tabooed subject sugar-honey. One man, even in the face of so good an authority as Mr. Cowan went so far as to assert that sugar syrup fed to bees remained sugar syrup. "It is sugar when you feed it to them," said he, "it is sugar when they store it, and it is sugar when they eat it. It is sugar from the first chapter to the last." Farther along in his paper Mr. Cowan said: "We prize honey not because it consists, as the chemist would say, of sugar and water, but because it possesses a delicate aroma and flavor, which is always absent from, and can not by any known means be imparted to, any artificially made syrup. Glucose, and even cane sugar that has been given to bees to store in the combs, are totally devoid of the aroma of honey."

One of the principal methods of detecting adulteration of honey is by the use of the polariscope. The chit of the whole matter is contained in the following paragraph:—

"The rotation of the polarised ray to the left of levulose is greater than the rotation of the same quantity of dextrose to the right. Therefore, when mixed together, as they are in honey, the polarised ray is twisted to the left side. All other sugars turning to the right, it is clear that whatever saccharine admixture is made to honey, the mixture must polarise to the right, thus possessing perfectly distinct optical properties, distinguishing it from genuine honey."

Mr. Cowan gave descriptions of how the different adulturations may be detected by the use of chemicals, but there is not room to copy them here, and the descriptions can not be condensed.

EXTRACTED.

DEVELOPING SHORT-TUBED CLOVER.

Some of the Difficulties Experienced by an Experimenter.

When the discussion regarding longer tongued bees and shorter tubed clover blossoms was begun my mind at once reverted to an interesting experiment with clover made years ago by my old friend, E. E. Hasty, of Richards, Ohio. One of the most interesting articles that he ever wrote was his account of this experiment. If I remember correctly, it appeared in the Bee-Keepers' Exchange, published at that time by J. H. Nellis. It was one of those first articles that Hasty wrote: and it attracted my attention at once and gave me a liking for the author. I wish that I could now find and reproduce that article, but I might hunt for it half a day and then not find it. I am not entirely disconsolate, however, as our friend Hasty has recently written on the same subject in Gleanings, and he is now able to give us some conclusions that he was unable to put into the first article. Here is what Mr. Hasty says:-

"Friend E. R. Root:—You call me out on the clover-developing proposition. Yes, I was in that effort quite a long timegrew cold at length, and let the multiplicity of other things cause me to drop out. Perhaps the indifference of the bee public helped me a little in getting cold; and if Dr. Miller's call for renewed effort gets lots of volunteers I may wake up and "tag on."

And what can I tell to the new volunteers which will be to their profit? Perhaps not very much. I'll advise them to keep distinct in their minds the three kinds of work to be done. Call them, if you please, A work and B work and C work. The A of it is to go into the fields and select short-tubed clovers. Better take plenty of time and do lots of this, as this is likely to be the most encouraging

part of it (perhaps all the encouragement von'll get). Field clovers vary greatly—vary in the line of being lots of long-tubed ones, and also vary in the line of there being few and rare specimens, which can be found by long hunting, much more hopeful than the easy-found ones.

Work C is the slow and tedious work of raising seedlings year after year, and keeping them from backsliding, as they will probably disgust you by doing, and slowly, with careful selection, getting a little shorter and shorter as the years go by. It was this work that tired me out. It is going to take a great many years. Five years, or ten years will be only a "circumstance" in it. Still, perhaps it's best not to give it up, even if like

Freedom's battle, once begun, Bequeathed from bleeding sire to son.

It is necessary to keep in mind the fact that the time of year, amount of fertility in the soil, vigor of growth, drouth or the opposite, and various other things considerably affect the tube-lengths of the same plant. On these accounts we often seem to be gaining when we are not. And it might be that we would seem to be losing when we were really gaining. Practically, after three or four years of effort you will probably feel very much befogged as to whether you have really gained any thing or not.

Work C is a sort of diamond-hunting work. Most plants, besides their capacity for gradual change, show from time to time sudden and great changes in a particular seedling or a particular bud. These almost startling manifestations are called "sports." If the desired bee-clover arrives during the present generation it will be by finding and rendering permanent one of these sports. During the years I was in the work 1 found two sports, or plants, which I called such. One of them I lost my grip of so completely that I have nothing to show for it -couldn't be *sure* that it would ever have filled the bill any way. The other one seemed to be pretty much all one could ask, gained at one leap—but with one lamentable shortcoming about as near to being seedless as a plant could be without being absolutely so. I never had a dozen seeds at one time. To have even one plant in bloom, when a friend called and I wanted to show him my prize—why, I considered myself lucky. A package in my clover-drawer says on the outside, "Three seeds 1897;" alas! too old to grow now, I fear-and that is all I have to show for years of effort with that incipient variety. Since the first few years, the most hope of success which I have been able to cherish has been that, with long practice, a plant might appear in this succession which would have flowers as open to the bee as the parent flowers have been, and also seeds like those a civilized clover ought to have. Perhaps when the weather gets a little cooler I'll try those three seeds for all they are worth.

There is also a sport which frequently appears in red clover, having white seeds and pure-white blossoms. I made easy progress in breeding these down to a fixed variety; but had I kept on to completion it would have been of the same use as stripes around our bee's tails, no use at all—tubes no shorter than ordinary reds.

But in fussing with the white sports I think I made a discovery which perhaps ought to be understood and considered by all those who work in such work as this. It is, that progress tends not to go on regularly with each generation, but by regular alternation of generations. A little hard to describe this so a reader will catch on readily. Say you are trying to get a white variety from a white sport. First generation von raise 100 seedlings, and say 3 of them are white and 97 backslidden and red. (Think you have got a tough job before vou.) Second generation, 100 seedlings turn out 50 white and only 50 backsliders. (Think you are getting on swimmingly.) Third generation you find 15 white to 85 backsliders. (Half inclined to give the thing up as impossible.) Fourth generation, however, pans out 55 white to 45 reds. And so it goes on, with regular oscillation back and fourth with each generation, but on the whole manifestly getting ahead. I have come to feel that something like this affects nearly all work of the kind with seedlings."

The very fact that plants and animals are so prone to revert to the original is most encouraging. This very stability is our hope. If we once succeed by many years of patient work in gstting a short tubed clover, there is some prospect that we may be able to keep it. If the plant were likely to dodge off this way and that every year, we would never be able to establish any particular strain. The more difficult it is to get a plant to change its habit, the more permanent will be the change when it is secured. At present, I think this a more hopeful end of the

problem than that of developing a strain of bees with longer tongues. I would not consider it more hopeful if we had some way of controlling mating of queens.

HATCHING CHICKENS.

Using a Bee Hive as an Incubator.

Sometimes when I go to the post-office to mail some queens the mailing clerk and myself get to swapping yarns. One evening I told him about the man who, thinking that corn meal was too concentrated a food for his fowls, mixed sawdust with their rations. The result of such a mixed diet was a trifle startling. One of the hens, having laid 13 eggs, began the process of incubation. In due time they all hatched, but what was the surprise of the owner to find that 12 of them had wooden legs, while the 13th one was a woodpecker.

Naturally, I expected that this would floor my friend, but he came up bravely to the attack. He said that, going out one morning in February to feed the horses, he was surpised to hear the unmistakable peep of a chicken coming from the manure pile. He poked away a little loose manure near the side of the barn, and there found a newly hatched chicken. The supposition was that a hen laid an egg in that place, or else somewhere in the litter where it had been thrown out, and the warmth of the fermenting manure had hatched the egg, even in winter.

Now comes Mr. J. G. Norton of Illinois, who tells the following story in the American Bee Journal:

My hives, as will be seen, are two-story chaff, that I adopted about 15 years ago, and have been a success for honey and also to hatch chickens. The first story is chaff-packed, four inches back and front, and two inches on the sides. Over the brood chamber I place a piece of oilcloth or canvas—either will do. I use for the eggs a cushion with hollow center which is the shape of a hen's nest, and will hold

from 16 to 50 eggs. The cushion is eight inches thick, and fills the top of the second story within two inches of the top.

After the eggs are placed in the nest, or incubator, another small cushion is pressed over the eggs, and all are kept warm. The temperature outside may drop 20 to 40 degrees, but that in the nest is kept about the same. I find in this latitude eggs can be set any time after February 15, and as we very seldom get surplus honey here before June 10, all this time can be used to advantage. The eggs need turning only every two or three days, in this way, so it does not need very close watching.

I am entirely satisfied with the plan, and to show how sure I am of the results, I have all the spring been setting pure Buff Cochin eggs worth \$5.00 a sitting, and have not lost a fertile egg; and the chicks are the best and strongest I ever had.

Be sure to use the strongest colonies as incubators, having at least six combs well filled with brood; then your test will result satisfactorily.

When in the queen business I used a lamp nursery for hatching out the queens. I often tried to hatch out hen's eggs in the lamp nursery, but never made a success of it. Incubation would begin. By holding the egg up to the light I could see the veins, and a dark spot that I suppose was the heart, but, after proceeding thus far, the process would stop and go no farther. I was talking about this with Prof. Tracy of Detroit, who had had some experience with incubators, and he said the trouble probably was that the temperature was not high enough. When he first began using an incubator he kept the temperature at about the blood heat of animals (98°), supposing that that was the correct heat. Afterwards he found that the heat of fowls is 105°. If Prof. Tracy is correct, and Mr. Norton has hatched eggs by the heat arising from a colony of bees, there is a discrepancy here that needs some explanation. The temperature in my lamp nursery was kept between 90 and 100°. If it went above 100° it cooked the queens every time. I believe that experiments show that the normal temperature of a colony of bees does not go above 100°. If this is

true, then Prof. Tracy must be wrong in saving that the temperature of an incubator should be 105°. Surely, some of the readers of the Review have used an incubator for hatching chickens, and they can give us the temperature that is used. Of course, my failures might have arisen from some other cause than that of low temper iture. It does seem, however, that if it is practicable to use colonies of bees as incubators for hatching chickens, that it might be much cheaper, and require less attention, than the use of an incubator; especially for those who wish to go into the business on a limited scale.

FALL CARE OF HONEY.

Harvesting, Storing and Crating.

A crop of fine honey may be ruined or greatly lessened in value by lack of knowledge or care in the harvesting, storing and crating. The following advice that I copy from the American Bee Journal was written by F. A. Snell, of Illinois. It contains nothing so very new or startling, but is a repetition of those things that need to be fairly drilled into the minds of some before they will be heeded. Mr. Snell says:—

"I go through my apiary twice each week during a good flow, and note the progress being made in the supers, as I can quickly do, as every super has an observation glass through which I can at a glance see what is being done. All completed supers are removed from the hives at each time freed of bees, and taken to the honey-room adjoining the bee-vard. At this time, if more room is needed it is given each colony requiring it.

Strong to have the honey in the best shape to sell, it should be removed from the hives as soon as all is capped over. The beautiful cappings are then white and very inviting. If allowed to remain long after being capped in the hives the cappings become darkened by the bees, and the appearance is injured.

As the summer harvest, which here is secured from white and alsike clover, and

basswood, nears its close, less surplus room should be given, for by the contraction of space in the supers more combs will be completed than in the larger space, and I desire to get all the finest comb honey possible. At the close of surplus gathering from the above sources, all the supers should be removed from the hives, cleared of bees, and stored in the honey-house.

"For the correct storing of surplus honey a warm, dry and airy room is essential. There should be windows at least on two sides of the room to admit light and a gool circulation. The windows should be opposite, and I think preferably at the east and west sides of the room. The building should not be shaded, and should be painted a dark red or some dark color, so as to draw heat. The hot, dry air of summer will in motion do much to still better ripen the honey. Screens of fine wire should be tacked on the outside of the windowcasing at the bottom and sides, and a 3s-inch space left at the top by full width of the window, and extend about one foot above the window. This will allow any bees that may be carried in with the honey to escape at the top and will also exclude all bees, flies and millers.

"The building should be one foot or more above ground, so no dampness may be caused from beneath. The windows should be left open on all pleasant days in summer. Of course, the honey-room should be mouse-proof. A strong rack should be made on which to place the honey, and preferably at one side or end of the room, as it will so least interfere with working room The rack should be one foot above the floor, so the air may freely pass under it. A row of cases should first be put on, and on top of these at the front and back strips one inch square should be placed; and this should be continued in the same way until the space is filled to the ceiling of the room, if necessary.

"All of the finest honey should be stored in a body, and that not so fine by itself. At the time the honey is taken in I place it to one side, and the next morning clean off the propolis from the supers and boxes, so far as we can, and tier it up on the rack in the proper place.

By storing the honey as above stated, the hot air circulates freely all through between the cases and boxes, just as it should do to ripen the honey more fully. The honey is thus left until time for crating to market, which is of necessity after the close of the summer harvest.

Some is crated to supply my home demand, but the larger part is left until September.

'The supers taken off at the close of the summer harvest not completed are

tiered separately.

"To handle and crate comb honey properly requires much care. The delicate combs are very easily cut or I ruised, and a little carelessness will result in broken combs and dripping honey. crating comb honey I have a case at my right hand on a bench; at my left I place A section-box is raised a honey-case. from the super, taken in the left hand, and with the right hand I use the hiveopener with which I scrape off the propolis from the box and place it at one corner of the case, next the glass. second section is removed from the super. and placed next to the first one in the case, and so I proceed until the case is filled. The other supers of the same grade are thus emptied. If any combs are cut, or in any way broken, such should not be put in the case. A very few broken combs, if cased, will make a dauby mess, as the honey will cover much of the case bottom and drip through, thus disgusting all who may in any way later handle the honey.

"I usually case my nicest honey first. which I grade as No. 1. That not so white in comb, or a little colored by the bees, and combs not so complete, is styled No. 2. The honey in the cases of each grade should be uniform in quality. The honey next the glass in each case should be no nicer than that in the central part. The honey should in other ways be cased so that to see the combs next the glass, as it stands in the store or commission house, may be an evidence of the quality of the whole case without further inspection. When honey is so put up, the purchaser, whether grocer or consumer, can take it, and handle it comb by comb with satisfaction in selling or using. Every bee-keeper has his own reputation to build up and hold; if he expects good sales in the future, his goods should be as represented by the honev in full view.

"The partially filled supers taken off at the close of the summer harvest should be looked over, and all complete boxes cased for sale, and those not so filled returned to the hives at the opening of the fall honey-flow, if such comes.

"For the second grade I use very few uncapped combs, or those combs not nearly all capped. I sell some of the partially capped combs to neighbors, or to those who call and may see and prefer it at a lower price. Those not sold at the close of the honey season are emptied and used the next season. My honey-cases have two glass sides, which show off the honey to good advantage, and aid sales. The covers are tight fitting, and come over to the outside of the cases, thus keeping out all dust, etc.'

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission-the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

CHICAGO-The market is in good shape for honey of all kinds, and this month is one of the best for its sale. We quote as follows: Fancy white, 15 to 16; No. 1 white, 14 to 15; fancy amber, 12 to 13; No. 1 amber, 9 to 10; fancy dark, 8 to 9; white, extracted, 7½ to 8; amber, 9 to 10; fancy dark, 8 to 9; white, extracted, 7½ to 8; amber, 9 to 10; fancy dark, 8 to 9; white, extracted, 15 to 61, there dark, 5 to 6; white, extracted, 7½ to 8; amber, extracted, 6¾ to 7; dark, extracted, 6 to 6½; beeswax, 28.

> R. A. BURNETT & Co., 163 So. Water St., Chicago, Ill.

Sept. 7.

NEW YORK-There is little comb honey on our market, and practically no demand through our channels, just at this time; no doubt caused largely on account of the risk in shipping during

largely on account of the risk in shipping during warm weather. We usually do little on comb honey before September.

We do not advise the shipping of extracted honey just at this time, for the reason that there is not much demand, and quite a liberal supply, although with our usual trade at this time of the year it would not take long to clean it up. can hardly report reliable quotations at this time, but we certainly must look for lower prices than last season.

FRANCIS H. LEGGETT & CO.

W. Broadway Franklin & Varick Sts. July 17.

NEW YORK - There is a good demand for omb honey of all grades. The supply light and comb honey of all grades. The supply light and large quantities could be disposed of to advantlarge quantities could be disposed of to advantage at the following quotations. Faincy white, 15 to 16, No. 1 white, 14 to 12; faincy amber, 12 to 13; No. 1 amber, 11 to 12; faincy dark, 10 to 14; white extracted, 7½; amber, extracted, 6½ to 7; dark, extracted, 6½, becswax, 28.

HILDRETH & SEGELKEN.

120 West Broadway, New York Sept 8.

CHICAGO-From this time forward we will have a large demand for comb and extracted honey. Prices at the present time are as fol-lows. Fancy white, 15: No. 1 white, 14: amber, 12 to 13; dark, 10 to 11; extracted, as to color and package, 6 to 6; beeswax, 25. We are cash buyers, or will handle on consignment. Always willing to follow instructions

S. T. FISH & CO.

Sept 7

150 So. Water St., Chicago, Ills.

KANSAS CITY — We quote as follows; Fancy white, 15; No. 1 white, 13 to 14, Tancy amber, 13; No. 1 amber, 12; white extracted, 81 good demand for beeswax at 22 to 25.

W. R. CROMWELL FRUIT & CIDER CO., Successors to C. C. CLEMONS CO.,

423 Walnut St., Kansas City, Mo. Augr a

BUFFALO - Demand for honey is much improved, and I can advise moderate shipments. Crate 150 or 200 pounds in a crate, with straw around it, and handles on the crate. We quote as follows. Fancy white, 15 to 17; No. 1 white, 14 to 15; fancy amber, 12 to 13; No. 1 amber, 16 to 17; fancy dark, 16 to 12, No. 1 dark, 9 to 16; white extracted, 5 to 7

BATTERSON & CO.

167 & 169 Scott St., Buffalo, N. Y. Sept 7

WANTID HONEY

Would like to hear from parties having honey to offer.

Wanted Extracted Clover and Basswood, such as suitable for bottling trade also Fancy White Comb-Honey in no-drip shipping cases. I PAY PROMPTLY ON DELIVERY and refer you to the A I Root Co. or The Brighton German Bank of Cincinnati, Ohio

C, H, W, WEBER,

2146 Central Ave., Cincinnati, Ohio.

A. I. ROOT CO.. 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight, - If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.



9-99-tf.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees

in summer and winter. We also carry a complete line of other supplies. Catalog free. R. H. SCHMIDT & CO.,

D1....

I have several hundred

CAGES QUEEN

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

Shebovgan, Wis

1900 Queens 1900

For Business-Queens for Strong Colonies-Queens for large surplus. Competion in Quality. but not in price.

If you want queens, nuclei or supplies at bottom prices, send for my illustrated price 12-97-tr

J. P. H. BROWN, Augusta, Ga.

Please mention the Review.

See the Points?

I have had it years experience in producing honey and rearing queens, and I am breeding queens from a queen that I got last spring from J. F. M. Intyre of Sespe, Cal. He describes this stock on page 12 of Gleanings for June 1, as filling the supers when other bees were starving. The drone-sin my yard are from excellent stock—such as that of J. P. Moore of Kentucky. I rear queens by the Doodittle plan, send them by return mail, and guarantee safe arrival, purity of mating early satisfaction, at 50 ets cach, in any mating, and satisfaction, at 50 cts each, in any quantity. Money refunded if queens are not sat-isfactory. Send for circular.

L. H. ROBEY, Worthington, W. Va.

Please mention the Review.

ROOT COMPANY'S PAGE

SHIPPING Our No Drip Cases are still in the lead. We keep constantly on hand a large assortment from 12 pound size up. We also make special sizes to order. That Root's Cases are in demand is shown by the fact that one dealer alone has ordered 16,000 this season.

WINTER Our Winter Cases are made of thin lumber dovetailed at the corners with a telescope cover. The cost is only 75 cents each singly, yet for convenience they are unsurpassed and only excelled by the chaff hive in the protection afforded. Don't let your bees winter-kill or spring-dwindle when you can avoid it by using our Winter Cases.

HONEY
LABELS

Treally altractive labels?

If you do not you may be losing many sales because your honey lacks attractiveness. You can't expect to market your honey at the best price unless you use every care in putting it up. Send for our Label Catalog and see our one two and three-color labels.

BICYCLES
AT COST

at market prices.
Having sold a carload of bicycle crates we took in trade a quantity of wheels which we will sell at cost. These are \$30.00 wheels. Our price, \$17.00 cash, or \$20.00 in trade for honey or wax. Catalog and full particulars on application.

COMB

FOUNDATION

If you order Root's Weed Process you may be sure you will be pleased with the result. We keep in stock the four grades in boxes of 1, 2, 3, 5, 10 or 25 pounds. A small order has the same attention as an order for a ton.

SPECIAL This is the time you should order odd size or special goods. Our busy season is over and we can do most any work in wood you want, either for bee-keepers or others. We make a specialty of packing boxes from the size of a section box up. Let us figure with you.

35272725

FEEDERS How about your winter stores? Are you sure your bees have enough? Should it be necessary to feed you can't do it easier than with our Division-Board Feeder. This is made to hang like a frame in a Langstroth hive. Price, 20 cents each, complete—less in quantities.

RUBBER
GLOVES
This is the time of year you need gloves, for robbers are about and bees are harder to handle than earlier.
Take comfort with a pair of our gloves.

Mark size of hand on sheet of paper when ordering. If you order by number, remember that in rubber you need two sizes larger than you wear in kid; i. e., if you wear No. 6 in kid you will need No. 8 rubber.

ODDS and ENDS

I am about to move to my new house, which is on a small for with streets on three sides of it, and I shall be compelled to give up the keeping of bees. I have a tew odds and ends that I would like to dispose of I have a two basket, second-hand, Ferris wax extractor that cost \$5,00 when new I will sell it for \$5.50. I have a new Ferris, single basket wax extractor, list price \$1.50, would sell tor \$2.50. I have a new, Dooflittle, solar wax extractor, list price \$1.50, would sell it for \$2.50. I have ten dozen, I-pound, square, flint glass, Muth jars with corks, worth so cents a dozen. There are four dozen of the same kind of jars, only they hold two pounds instead of one, and cost og cents a dozen when new. I would sell them at 45 centsa dozen.

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W. Z. HUTCHINSON,
FLINT - - - Mich.

Listen! Take my advice and buy your bee supplies of August Weiss: he has



tons and tons of the very finest

FOUNDATION

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies—Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

19



00

This is the original one - piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$8.2560;

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK.

Watertown, Wisconsin.

If the

REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

JOHN F. STRATTON'S



CELEBRATED

Birmingham Steel Strings

for Violin, Guitar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catlg

JOHN F. STRATTON,

Importer, Manufacturer and Wholesale Dealer' 811, 813, 815, 817 E. 9th St., N. Y.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

Queens, Nucl i and Cclonies.

Best of Honey Gatherers.

Special prices to introduce during July, August and September. Untested queens, 50 cts each; 55 50 per dozen. Tested, 51,00 each. Nuclei, add 50 cts per frame to price of queens. Write your wants. Satisfaction guaranteed.

S. P. CULLEY, Higinsville, Mo.

Queens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 ets.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

If You Wish Neat, Artistic



Have it Done at the Review.

Our Fall Specialties

Are your Fall Necessities-

- SHIPPING CASES, FIVE GALLON CANS, DANZ CAR-
 - TONS, AND CASH OR
- TRADE FOR BEESWAX

Send for Catalog.

0

M H. HUNT & SON, Bell Branch, Mich.

DOES IT PAY?

To buy poor queens, or those selected to give very Vellow BEES, when you can get a strain of yellow bees that for years has been bred for HONEY GATHERING and PROLIFICNESS? Here is a sample unsought testimonial.

"Some of the queens 1 got of you are wonderful layers; in fact, I have been able to get

hold of uch stock only once before.

Thos. BRODERICKS.

—See back ads. and circular. Moravia, N. V."

FOR TRIAL. I offer: warranted queen for 60 ets; 3 for \$1.50; select for 80 ets; 3 for \$2.25; ordinary tested, 75 ets; select queens, tested, \$1.00 to \$1.50; best, \$2.00 and upward.

J. B. CASE, Port Orange, Fla.

QUEEN CRANK

Occasionally has some second-class queens as to color of offspring that are first-class in every other respect. That is, three-band bees predominating from golden mothers, and rather than palm them off as untested, he sells them at socts each. When five-band bees predominate and do not exceed. So per cent, they are worth \$1.00. From this up to 95 per cent, \$125. A higher grade but not uniformly marked, \$1.50, and breeders \$2.00 each. Untested, either three or five-band, 75 cts each, or three for \$2.00.

W. H. PRIDGEN,
(Money order office,
Warrenton, N. C.)

Warrenton, N. C.)

Exhibition Hives.

I shall probably make no more exhibitions of bees and honcy at fairs. I have too many other irons in the fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new, but I would self them at 15 cents each.

W. Z. Hutchinson, Flint, Mich.

Selection.

Selection has been the chief factor in the developement and building up of our improved breeds of horses, cattle, sheep, swine, and poul-Men have devoted the best years of their life to a single line or branch of this work-and not without their reward. In bee-keeping but little has been done in this direction. The developement of a bright vellow bee has been the most noticeable thing that has been done in this line. This is the most easy of accomplishment, as results are so quickly and easily discernable. To breed for honey-gathering qualities is a much slower process. As soon as bees hatch out we can decide in regard to their color, and as to whether we wish to rear queens from their mother for the purpose of improving the color of our stock; to decide in regard to their working qualities requires months-perhaps years.

Every experienced bee-keeper must have noticed how much more surplus is stored by some stocks than by others. Time and time again, when visiting bee-keepers have I been shown some particular colony, and heard the owner tell with pride how much honey it had stored year after year; always coming through the winter in good condition, or doing this or that that was so desirable. The strange thing is that bee-keepers so seldom seem to realize the value of such a colony or queen, as a starting-point from which to improve the stock of their whole apiary If they do realize it, they seldom take advantage of the knowledge. Suppose, by the introduction of improved stock, a man can increase his surplus, on the average, one year with another, ten pounds per colony, and that is not an extravagant estimate, on too colonies his surplus would be increased no opounds. The cost for hives, grounds, labor, wintering, etc., is nearly the same with one kind of stock as with another, just as it costs as much to keep a scrub cow as it does to keep a Jersey, and a gain in surplus that comes from improvement in stock is the most profitable that can be secured. To improve your stock, get the VIRY BIST that you can for breeding purposes and with this stock your apiary, then watch carefully, and breed from these colonies that do the lest. Continue this year after year, and you will be surprised at the results.

This matter of beginning with as good stock as you can get, is all-important. Don't lose years of time by commencing with common or inferior stock. Get the best, and thus be able to commence right where some other breeder left off. As explained in previous advertisements, I am selling queens from stock upon the development of which a good man has spent twenty years; making crosses, and then each year selecting the best to breed from. I have several times tried this strain, and know it to be the best that I have ever tried.

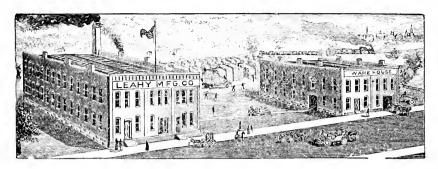
The price of these queens will be \$1.50 each. This may seem like a high price, but the man who pays it will make dollars where this breeder and myself make cents; and when you come to read the conditions under which they are sold. it will not seem to high. The queens sent out will all be young queens, just beginning to lay, but, as there are no black bees in the vicinity, it is not likely that any will prove impurely mated. If any queen should prove to be impurely mated, another will be sent free of charge. Safe arrival in first-class condition will be guaranteed. Instructions for introducing will be sent to each purchaser, and if these instructions are followed, and the queen is lost, another will be sent free of charge. This is not all: if, at any time within two years, a purchaser, for any reason what-EVER, is not satisfied with his bargain, he can return the queen, and his money will be refunded, and 50 cents extra sent to pay him for his trouble. It will be seen that the purchaser runs NO RISK WHATEVER. If a queen does not arrive in good condition, another is sent. If he loses her in introducing, another is sent. If she should prove impurely mated, another is sent. If the queen proves a poor layer, or the stock does not come up to the expectations, or there is any reason why the bargain is not satisfactory, the queen can be returned and the money will be refunded, and the customer fairly well paid for his trouble. I could not make this last promise if I did not know that the stock is really superior.

I said that the price would be \$1.50 each. There is only one condition under which a queen will be sold for a less price and that is in connection with an advance subscription to the Review. Any one who has already paid me, or who will pay me, \$1.00 for the Review for 1000, can have a queen for \$1.00 That is, you can have the Review for 1000 and a queen for \$2.00. Of course, all arreatages previous to 1000 must be paid up before this offer will hold good. This special offer is made with a view to the getting of new subscribers, and as an inducement to old subscribers to pay up all arreatages and to pay in advance to the end of next year.

W. Z. Hutchinson, Flint, Mich.

P. S -For the first time, I am now able to fill orders for these queens by return mail.)

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. 60., Higginsville, Mo.. East St. Louis, Ills. Omaha, Nebraska.

Gontraction

Of the brood-nest can be made very profitable if practiced in the right manner, with the right kind of hives and appliances, in the right locality and in the right time of the season. reverse will prove true if mistakes are made. Vour locality may be one in which contraction, if rightly managed, would put many dollars into your pocket. All of these points are fully explained in one of the chapters of ADVANCED BEE CULTURE. Besides this, the book contains 31 other chapters on equally important subjects.

Price of the book, 50 cts.; the Review one year (and twelve back numbers) and the book for only \$1.25.

W. Z. HUTCHINSON,
Flint, Mich.

Honey FOR Extractor SALE

I have a nearly new, Van Allen & Williams Honey Extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed automatically—without stopping the machine. The regular price of this machine is \$20.00, but, as this has been used some, I will sell it for \$15.00. I would exchange it for bees, or anything else I could use.

Н. Е. НІЦЦ,

Ft. Pierce, Fla.

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free.

W. T. Falconer Mfg. Go.,

Jamestown, N. V.

New W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be utilized by the Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

BLACK and HYBRID QUEENS,

In fact, all inferior queens should be replaced with good young ones. With such queens you will have better success in wintering and a strong colony for the earliest honey-flow. I am a honey producer, as well as a queen breeder, and know the value of a good queen in a honey hive. I have selected for my mother queens those that I consider perfect in every respect. Their bees are large, gentle, and wonderful honey gatherers. My drone mothers are also carefully selected.

Queens go by Return Mail.

1 Untested Queen, 50 cts.; 12 for 5.50. 1 Tested Queen, 51.00; 6 for \$5.50; 12 for \$5.50. Write for prices on larger numbers.

\$10.00 REWARD!

To the person who sends me the most money for queens between April 1 and November 1, 1900.

Please send me one brass smoke

Enclosed find \$1.75

I have one already. It is

W. O. VICTOR,
Wharton, Texas.

Hutto, Tex., April 10, 1900

Wm Bamber,

Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,
Augusta, Wisconsin.

enry Schmidt.

the best smoker leverused

Violin for Sale.

I am advertising for the well-known manufacturers of musical instruments, Jno. F. Stratton & Son, of New York, and taking my pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradiuarius." Red, French finish, high polish, and real ebony rimmings, price \$44.00. The bow is of the finest snakewood, ebony frog, lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony screw-head, German silver ferules, and pearl dot in the end, price \$2.50. The case is wood with curved top, varnished, fall-lined, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is exactly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some instruments here that cost several times as much. I wish to sell this outfit, and would accept one-half nice, white extracted loney in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines, Iowa, manufacturer of and dealer in Apiarian Supplies. Send for circular. 1-96-6

Please mention the Review.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

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We furnish a full line of supplies at regular prices, Our specialty is Cook's Complete hive.

J. H. M COOK, 62 Cortland St., N. Y. City

Make Your Own Hives.

Bee - Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

Machines on trial. Send for Catalogue.

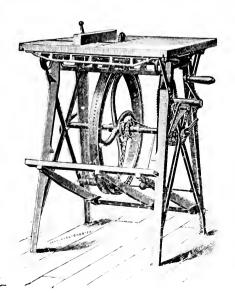
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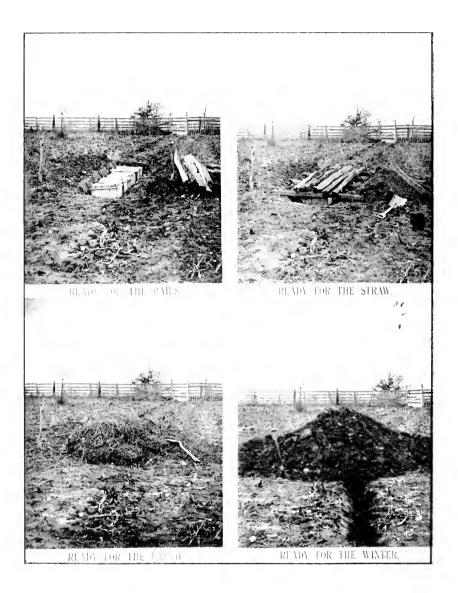
Great Clubbing Offers.

My friends, how many of you are reading some of the many, most excellent magazines of the day? If you are reading none, you are missing a great treat. Perhaps you regard them as luxuries. Possibly they are in some instances. They certainly help to fill out our lives and to give us broader views. They are like windows that allow us to look out over the wide world. This life is not wholly one of dollars and cents—at least it ought not to be. Enjoyment, pure and simple, enjoyed just for the sake of enjoyment, is desirable and beneficial. To many there are few things that are more enjoyable than the bright pages of a really good magazine. To those who wish to give the magazines a trial, and to those who are already reading them, I can offer some of the lowest clubbing offers that have ever been made. Here is what I have to offer:

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Success, Current Literature, McClures, Home Magazine, and the Review for only ..., $4.00
Success, Current Literature, McClures, Cosmopolitan, and the Review for only ... .....4.60
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    Literature in any of the above combinations if desired.)
..... 3.25
Success, McClure's, Cosmopolitan, and the Review for only
Success and Cosmopolitan, and the Review for only .. ..... 2.50
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All of the foregoing are monthly magazines, and the regular subscription prices are as follows: Success, \$1.00; Current Literature, \$3.00, Review of Reviews, \$2.50; McClure's, \$1.00; Home Magazine, \$1.00; Pearson's, \$1.00; Cosmopolitan, \$1.00. A little figuring will readily show that the offers are unprecedentedly low; and I am very glad, indeed, that I can make them. Address,

W. Z. HUTCHINSON, Flint, Mich.



The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers. \$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL X.II, FLINT, MICHIGAN, OCTOBER 10, 1900. NO.10.

INTERING BEES BY
BURYING THEM IN
CLAMPS. BY W. Z.
HUTCHINSON.

For many years I have wintered bees by burying them in the ground, much as



farmers bury potatoes and other vegetables. I don't remember where I first got the idea, but I do remember having some correspondence on the subject with Mr. C. J. Robinson, of Richford, N. Y. He very persistent-

ly urged me to give no ventilation. He asserted that the bees would winter better with no ventilation—that the hibernation would be more perfect than in a "sea of oxygen." I was very loth to take this advice; and it was with many misgivings that I finally ventured to risk six colonies with no ventilation except that which would come through the earth. At the same time I buried a dozen other colonies, giving them ventilation by means of a four-inch tube laid along the bottom of the trench, and extending out into the

outer air. There was also a similar tube at the top, extending from the bottom of the pit up through the earth some three or four feet. I remember that I had a thermometer hung, by means of a string, in this upper tube, and that I often climbed up and drew up the thermometer to learn the temperature. The outside temperature had very little effect upon that inside the pit. When the mercury stood at zero in the open air, the thermometer drawn up from the clamp showed 43°. It did not vary three degrees from this in all winter.

The bees wintered perfectly in both clamps. It seemed as though they were just about the same as when set in the previous fall. The straw around them. and the hives and combs, were dry and clean and free from mold. My belief in the ability of bees to pass the winter with no ventilation was greatly strengthened. The next winter I put 32 colonies into one clamp, and wintered them perfectly with no ventilation. This brought my confidence up to such a height that, the next winter. I put 96 colonies into one clamp, and lost nearly all of them. There were 16 hives that had live bees in them when dug out in the spring These were weak in numbers, and several of them balled and killed their queens when they

were set out. This was the most serious loss with which I ever met while in the bee-business. There was no dysentery. The combs were clean and dry and full of honey, but the bees had deserted the hives, and crawled all through the straw. Perhaps the heat generated by so great a number piled in such close quarters drove out the bees. Perhaps they went in search of air. They certainly went.

Since then I have several times wintered a dozen colonies in one clamp, and always with good success except in clay soil. Two or three times I have tried it there, and the bees wintered poorly; the hives and combs coming out in the spring reeking with mold and dampness. My successes have all been on a dry sandy hillside. With such a location I should have no hesitancy, whatever, in putting any number up to 25 or 30 into a clamp. It is possible that a large number might winter all right if given sufficient ventilation, but I am without experience on that point.

The work of burying the bees is about as follows: First dig a trench wide and deep enough to allow the hives to set down in until the tops of the hives are level with the surface of the earth. in a little straw and lav in two rails a foot apart. Set the hives in a row on these Put some straw around the hives, and then lay some rails over the hives. putting some short pieces of rails across under the rails to support them. cover the hives liberally with straw, say, to a depth of two feet, and then shovel on the earth to a depth of 18 inches. Sometimes I vary this by putting on only a few inches of earth, and then another layer of straw and then a few more inches of earth, covering the whole with a light covering of manure.

I do not know that wintering bees in clamps has any advantages over that of wintering them in the cellar, and it is certainly considerable more work; but when one has a few colonies to winter at a place where there is no cellar, and experience has told him that indoor winter-

ing is better than out-door, he can successfully winter the bees by putting them in a clamp, if the soil and location is suitable. Don't winter in clay. Don't bury them where water will stand. Don't try wintering large numbers without ventilation, in fact, my experience is against large numbers, and I do not know that there is any objection to giving ventilation, even with small numbers, but I have never found it necessary.

FLINT, Mich., Oct. 9, 1900.



NTRODUCING QUEENS BY AN IMPROVED HATCHING-BROOD PLAN. BY M. M. BALDRIDGE.

Friend Hutchinson: I have read in the Review what you and others say



about introducing queens with absolute safety. The only safe way I have tried is to give the queen to hatching brood, same as you advise, but I place the same in a top story over the brood nest, with a fine wire-

screen between. This keeps all robber bees and the bees of the bottom story away from the queen, and insures the requisite heat for both the queen and the hatching bees. Any time inside of a week, and when there are plenty of bees in the top story to protect the queen, I remove the wire screen and let the bees in the bottom story have access to the queen. Of course, the queen in the bottom story has been previously removed and all queen cells destroyed. A day or so later the brood in both stories can be consolidated in one story, if so desired.

As many combs of hatching brood— (none unsealed) can be given to the top story as desired, and these can be taken from the bottom story or from other colonies in the apiary. I prefer to remove the screen near sunset, and to disturb the bees as little as possible with smoke or otherwise.

The queen in the lower story need not be removed, if thought best, until the proper time comes for removing the dividing screen. By this means there may be no loss whatever in egg laying.

I allow no bees to fly or go outside of the top story until after both stories have been united, as stated. In fact, the young bees in the top story will have no special desire to fly during the first week of their lives. Nor will there be much hatching larvæ to feed.

· You will see, friend H., that my plan makes an incubator of the lower colony and does away with any loss to the hatching brood, or the new queen, by reason of any sudden change in the temperature of the weather or from robber bees. Try my plan and report.

ST. CHARLES, Ills. Aug. 25, 1900.

OBACCO SMOKE A "SURE THING" FOR INTRODUCING QUEENS. BY B. F. JONES. M. D.

Recently, I have noticed articles on introducing queens by the aid of tobacco smoke; and, from a perusal of these articles, it would be difficult for the novice to decide for or against the method. Some object to it; others say very little to encourage it; and, according to the evidence, ninty nine out of every hundred use the eating-out method.

At the beginning of my experience I used the eating-out method, and lost a large percent. A friend then instructed me in the use of tobacco smoke, and the only ones lost since have been by the eating-out plan, which was used when it was impossible to be on hand at the proper time on account of professional business.

This is how 1 do it: After the queen arrives I at once examine the queenless colony that is to receive her; destroying all queen cells that are started. If a queen is to be removed, it is done in the morning of the day when her successor is to be introduced. If nuclei are to be formed, it is also done during the forenoon, and the queen in either case is to be given at dusk when the bees are all in. When evening approaches, if it is cool I begin earlier; if warmer and the bees late returning, I delay somewhat.

For smoker fuel Luse white cedar bark: although any kind can be used. use as a starter, a piece of burlap, or old cotton rag, impregnated with saltpeter by soaking in a solution of saltpeter, and drying. When nicely started, a teaspoonful of any granulated smoking tobacco is dropped in. I first give the queen a puff, then puff smoke at the entrance of the hive sufficient to drive the smoke to every part of the hive. After one minute I raise the cover carefully, following it with sufficient smoke to reach every bee and drive them back. Then I pry off one end of the wire cloth of the shipping cage. and allow the queen to run down between the combs, following her with a puff of smoke, drop the quilt and close up the hive.

To sum up: Never dequeen, or form nuclei, in advance of receiving a queen; for she may never come or may arrive dead. See that smoke reaches every bee, as well as the queen; and allow the queen time to quiet down. Then she will not take wing, as in case of liberation while agitated. Destroy all queen cells in the forenoon of the day of introduction in colonies having been queenless sufficiently long. Close the hive, after liberating the queen, and do not disturb her for four days. There cannot be a simpler or easier method; and you may as confidently expect to find the queen in possession of the hive as you were that she was put there.

IDAHO FALLS, Idaho, Oct. 1, 1900.

OW TO MAKE OF BEE-KEEP-ING A MORE SAFE, PLEAS-ANT AND PROFITABLE PURSUIT. BY ADA L.

PICKARD.

"If to do were as easy as to know, what were good to do, chapels had been



churches, and poor mens' cottages princes' palaces. It is a good divine that follows his own instructions."

Many readers remark that articles written from time to time are all right in theory, but when

put into practice do not work as represented on paper. These statements may be true; but perhaps the reason why they did not work was because the operator failed to carry out the plan and method proposed. No one has any right to advance simply theories, which he knows will not work; instead, he should advance plans and methods which have been tried and proven. Our theme, to which we must resort, is "How to make bee-keeping a more safe, pleasant and profitable pursuit." We must first make the statement that bee-keeping can not always be relied upon as a safe occupation without any other source of income. We are entirely dependent upon circumstances, and at the mercies of conditions. sometimes that no matter how well the apiary is managed there are conditions which will not permit us to obtain a honey crop. "It is not all gold that glitters" in any occupation.

Often the winters are open, one day freezing and the next day thawing, with no snow upon the ground, and white clover is "winter killed;" and in regions where clover is exclusively depended upon for the honey crop we hear failure, failure as the result. In the basswood

belts there are also many draw-backs, and discouragements; such as late spring frosts, drouths, and the difficulties which have been experienced with flies and working upon the basswood bloom; thus making the long looked for honey crop a failure. Then, in other localities, the apiarist suffers many times from drouths which ruin his honey crop; almost every locality and business has its draw-backs. "Green Fields" are always far away. Some may think I have mentioned too many of the discouragements, but when we take the bitter with the sweet, the sweet is all the sweeter. Every stage of life has its shadows with its sunshine, so it is with every business, each has its failures with its successes.

There is not always a honey crop when there is bloom, as the conditions of the atmosphere greatly influence the secretion of the nectar; and after the bee-keeper has experienced many of these difficulties he is convinced that bee-keeping alone is not a safe pursuit.

But it may be made more safe and profitable if operated with another occupation; thus shooting the arrow you may kill two birds, while the other way only one is aimed at and that too may be missed. Some will not agree with me here, but will say divided attention means failure. No! not necessarily, one can operate more than one occupation and not neglect either if he selects occupations that will work well together. It is a very good motto to say "This one thing I do" but sometimes it is better to say these /wo things I do, and place your time and attentions along these lines.

Supposing most bee-keepers to be farmers, an agreeable occupation that could be combined with bee-keeping with success (and more safety and profit to the bee-keeper, and perhaps more pleasure if it proved profitable) is that of sheep raising. The combination of the two would give the bee-keeper another source of profits if the season proved unsuccessful with the bees. The sheep and little lambs may be cared for in early

spring before the bees are taken from their winter quarters; and after the bees have been taken out they will not require all of one's time and attention in the early part of the season; and after the season has advanced until the bees require all of the apiarist's attention the sheep may be left in the green fields to feed upon the tender grass, while the little lambs gambol about, filling the owner with pleasure as he sees the demonstration of new life. The old German adage says:

"Keep plenty of bees and sheep."
Then cosily lie down and sleep."

The German writer undoubtedly thought the one keeping pleuty of bees and sheep had a safe and profitable pursuit; thus realizing a good income, and, consequently, free from worry, he could sleep contentedly.

Bee-keeping as a pursuit affords great pleasure, as it is a branch of thought and study belonging to nature, ever presenting rare food for the observing faculties to those on the alert to receive them. To be susceptible to this pleasure one must, if not already possessed of it, cultivate a taste and love for the study of nature; as the bees are ever presenting habits and instincts which are marvelous. Then, too, from a moral stand point, bee-keeping is a pleasant and profitable pursuit, as it has a tendency to elevate the desires and ennoble manhood.

No one will dispute that bee-keeping is a profitable pursuit if managed in the proper manner, but I claim it may be made a more safe and profitable occupation if operated with another occupation; one that will not detract too much attention from the bees.

To be a successful apiarist one must be willing to attend promptly to the varied duties; never "putting off until to-morrow what ought to be done to-day," and one must be cautious and observing. One must always be willing to look after the little things about the apiary, as many dollars are sometimes lost by carelessness. "Look after the penny and the dollar

will take care of itself." The weak colonies need the care and special atten-By taking a few frames of hatching broad from a strong colony at the proper time and giving it to the weak one you will have two good colonies for the honey harvest instead of one. Save all of the scrapings and render them into wax, which when saved will amount to many more dollars than one would imagine if not accustomed to saving those little bits. And carefully watch the honey house that mice and moths do not get in and work upon the combs stored away; for many dollars may be lost in a short time by this careless neglect.

When we consider the comparatively small amount of capital invested, and the relative small amount of labor and expense required to operate an apiary, one is surprised at the abundant reward. I do not wish to be understood here as claiming that labor is not required in the apiary. The apiarist with several hundred colonies must, at certain seasons, work vigorously both muscle and brain; yet this hard physical labor will last only about five months; and the balance of the year may be spent in comparative leisure.

The apiarist with a large apiary, or per haps several apiaries, can certainly operate his apiary with less expense and labor if he produces extracted honey. once prepared for extracting, there is comparatively little expense; about the only expense is that of the package for the honev. We have no sections, thin foundation, or shipping crates to buy; are free from the expense and worry of changing the shape the honey is to be stored; whether it shall be in tall, or in square sections; round or hexagonal. In producing extracted honey, one always knows in what style the honey is to appear. Then, I believe, there is more profit, (and less labor in producing extracted honey than comb; because the bees will store more honey. The bees are not obliged to build comb in the honey flow to store their honey in, and use, as it is claimed by some, twenty-one pounds of

honey to make one pound of wax, but can store that twenty-one pounds in the extracting combs to be extracted. course, you will say the extracting combs had to be made; yes, but when once made they may be used for a life time, while the comb for producing comb honey has to be built every year. We are using combs in our apiaries that are at least twenty-five years old, and I do not see but what they are good for another twenty-five years. The idea of old combs discoloring the honey is more of a theory than anything else. In my opinion a colony can make two pounds of extracted honey to one of comb. When fancy comb sells for 15 to 16 cents, extracted sells for 8 to 9 cents (these are the prices at time of writing). A good average for an average colony in an average season is 100 pounds, and on the basis of two to one, all things being equal, the comb honey colony would produce only fifty pounds. The difference in quantity produced and the difference in prices would make a net income of one dollar more per colony if managed for extracted honey. To procure a crop of fancy comb honey everything must be favorable. The colony must be in the proper condition, the season right, and the honey flow right; whereas, if the honey flow is short, and we get only a little honey in the extracting combs, that which we have is in a marketable shape with no losses.

In preparing for a crop of honey, either extracted or comb, it must be the apiarist's highest aim to secure the greatest number of workers for the honey flow; these may be secured by having abundant food for spring stimulation, good young queens and plenty of room for the queen, so brood rearing may always be in progress. One must always be on the alert that the bees have room for work at all times; as myrids of workers idle mean heavy losses in quantity of honey obtained, hence losses in profits.

Although it costs a little to provide each colony in the apiary with a queen excluder it is more profitable, as time is saved in extracting full combs of honey instead of partly filled ones, containing honey and brood. Then, too, the honey extracted from full combs, well sealed, presents a more palatable appearance than honey extracted from combs with unsealed brood, having in the extractor honey and "those worms" together, as the larvæ are sometimes spoken of by those who visit the apiary; and we as apiarists should strive to have the honey house, extractor and everything about, as clean and tidy as possible, thus making the honey more appetizing; as it is our business to educate people to eat honev; especially when we keep bees, with the view of producing honey for sale. The honey should be ripened upon the hives, for it to have the best flavors. Pick an apple before it is ripe and the flavor is lost; extract honey before it is ripe and the best flavors are lost. let us ripen the honey on the hives as the best quality always brings the best prices.

RICHLAND CENTER, Wis.,

Mar. 15, 1900.



RODUCING EXTRACTED HONEY AT A GOOD PROFIT.
BY H. P. MINER.

To the question: Is bee-keeping a safe and profitable investment, or can one expect a fair living from it, if rightly pursued?

I most emphatically say jes! If a person has a liking for the business, is industrious, not afraid of work or stings, has push, energy and good sound "hoss sense," he cannot find any rural pursuit that will bring him more income for the capital invested or time spent than will bee-keeping; supposing, of course, that the apiary is situated in a locality where honey producing flowers exist.

Perhaps it may be well for me to say that it has been only eleven years since I first had an attack of bee fever, and ten years since the first bees were purchased; it will be seen that I am only a "novice" at the business. Of course, I have been rather successful: the three original hives and one log, or gum, have increased until at the close of the past season, there were 305 colonies in chaff hives packed for winter, on their summer stands. The largest honey crop was during the season of 1898, viz. 12,000 lbs, secured at an outlay of labor of 55 days, including the time of team used in moving bees, hives, etc., and also the time of the horse used to carry me to out-apiaries. This is the actual time taken in working with the bees during the summer, but does not count time spent in nailing hives, etc.

I will now describe as briefly as possible my methods of bee keeping. As I have to oversee the farm-work on two stockfarms of 200 acres each, it is necessary that every motion made in the apiary counts as much as possible.

Supposing that you have your apiary in a good location with hives in rows ten feet apart, and hives in the row to be in pairs, with a three foot space between each pair of hives, when all are on their stands there will be an eight-foot alley between the rows, and between every other hive in the row will be a three-foot alley, and have the rows straight both ways to avoid dodging hives with the wheel-barrow, and to facilitate mowing the grass or weeds about the apiary.

Next make a honey house to accommodate your extractor, uncapping can, empty hives, honey packages, and still have some spare room, as you don't want to be cramped for room. One 12 x 24 will be large enough for 100 colonies. Be sure it is bee-tight. Have the windows covered with screen wire, with a bee escape at the top so that bees taken in on the extracting supers may readily pass outside.

You also need an extractor, and don't get anything smaller than a four-frame reversible. I use a six-frame Cowan and would have nothing smaller.

The first work to be done in the spring in this locality is to look over the bees

about April first and see that each colony has plenty of stores and a good queen. Remove the burlap covering from over the brood frames and substitute the super covers so as to confine the warm air; as no upward ventilation is necessary in summer. Replace the chaff and leave until about May 10th, when the chaff should be removed, and, if necessary, extra combs or supers added.

Every five or ten days look them over and add extra frames or supers as needed, until the white fancy harvest is over.

One day's work, by using a wheel-barrow, will be sufficient to look over 100 colonies, and place enough empty supers to last 5 or 10 days, if you do not have more than 10 miles to travel from your home to the out-apiary.

After the honey is all capped you are ready to extract, and not before; use supers with self-spacing frames 5½ inches deep and have all frames wired; as you can't do rapid work, or wheel, shake; or handle supers filled with loose frames, without killing bees, or bruising the surface of the combs.

Get vour wheel-barrow close behind the hive, have your smoker ready, and pry loose your cover, puff in some smoke with the right hand, meanwhile flopping the back end of the super cover to force the smoke down faster; remove the super cover with the left, and set your smoker down and with the right hand pry the super loose from the back end. Pick up the super and give two or three sudden jerks over the hive, to shake most of the remaining bees from the frames, set it on the wheel-barrow, with the frames running lengthwise; never mind if you have left a few bees on the super; take the next super, or go to the next hive, repeat the operation until you have six or eight supers on your wheel-barrow; wheel it into the honey house and pile them cross-ways of each other, so as to let the bees out faster; they will fly to the windows and go out faster than two men could brush them from the combs. By the time you have 500, or 1000, lbs.

off, your first supers will be clean of bees; it need not take more than one or two hours at most, to remove the supers to the honey house.

If alone, set your upcapping can close beside the extractor, so as to easily reach the extractor handle. After uncapping the combs fill the extractor; give it a few turns and let it run of itself while you are uncapping and piling up your next batch of twelve half-depth frames for the next filling; occasionally give the crank a few turns to keep up the motion. ways place the top-bars together in the comb-baskets; when taking out the empty combs, grasp both top bars with the right hand and lift them out; with the left grasp the other end let the top comb roll over beside the under one and you have them in the right position to set in the empty super.

With a little practice you can easily remove, uncap, and extract 500 to 1000 lbs. per day, alone, and put the empty supers back on the hives, which I do toward evening.

I have alone taken 1080 lbs. of honey from the hives, uncapped, extracted, put it into five-gallon cans, and returned the empty supers to hives, working from 7 o'clock A. M., to 6:30 P. M. Others may have done far more in less time.

With a six-frame machine 5 lbs. can be extracted as quickly as 2 lbs. can with a two-frame extractor. I have both, but don't use the smaller unless compelled to.

For filling 5-galllon caus use a large funnel holding a pail full, and have a cork that fits the lower end of the funnel, with a large wire reaching up through the honey to the top of the funnel; when your can is full cork up the funnel and change to the next can and have no spilling.

After the cans are filled place the cover on the box and nail—but don't nail the can.

About October first, remove the supers from the hives to the honey-house, look through the hives and see that all colonies have 25 lbs. each but 50 lbs. will do no harm, as they will make good use of it.

Let the bees quiet down to their now smaller hive for a day or two before putting on the chaff for winter. Get the winter cases and distribute, one to each hive, a sheet of burlap to cover frames and three corn cobs to use as a Hinl's device, as cobs are cheaper and better as there is no metal about them, besides they make No. I smoker fuel for next season

Load your crate of 5 or 10 bushels of chaff onto your wheel-barrow, and wheel it along behind the hives right where you want it, then fill a half bushel with chaff so as to be all ready before you open the hive. You don't need any smoker or veil as the bees are somewhat dormant at this time of year and will not fly for a few seconds.

Next uncover the hive with the left hand, meanwhile with the right putting on the three cobs across the frames for the bees to cluster between, set on the chaff case, and lay the burlap over the frames and cobs, and dump in your chaff, seeing that it fills the corners well, put on the cover and take the next hive, it need not take much longer than to read this.

After having chaffed all, then pick up the super covers and put them in the honey-house, and if the apiary is where the snow does not drift you need not look at them until the next spring.

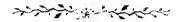
One man can easily chaff 100 hives per day where the chaff, cases, etc., are at the apiary.

Compare this with lugging bees into caves, up and down cellar stairs; besides, the bees certainly appreciate a cleansing flight occasionally during winter.

After the bees are all chaff packed for winter, then look up a customer for your honey crop, if you should have a crop, and keep yourself posted as to market prices, and don't let some unreliable commission house fool you with its high prices. Some years, selling is harder than producing.

Having sold your honey, take part of the proceeds and attend one or more beekeeper's conventions, for it is time well spent, even if you have heard about all of the new "kinks" of the trade through the bee-periodicals. Take and read the bee-papers, the more the better, be progressive, up to date, ready to receive and give information, keep abreast the times, push your business and always be ready for the honey flow when it comes, and don't be a drone; be a worker.

RETREAT, Wis., Mar. 26, 1900.



EMPERATURE AT WHICH HEN'S EGGS HATCH. THE FEASIBILITY OF HATCHING THEM IN A BEE HIVE. BY H. G. QUIRIN.

I notice that you desire information as to the correct temperature that eggs ought to be kept for



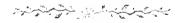
hatching. As I used to turn out several thousand chicks per year, using artificial means for hatching them, I think I can throw some light on the subject. To 2 degrees is correct for a double-tank machine, and To 3 for a single-tank, as To 2

in a double-tank machine is equal to 103 in a single-tank machine. The abov temperatures are correct for the first week or ten days of incubation; but as soon as blood vessels are noticeable in the eggs, action or motion sets in, and heat will be generated by the egg itself. This is not noticeable until about the tenth day, at which time less oil will be burned, and the heat will also run a little higher. On the eighteenth day the temperature will stand at about 104, to 105°. It must never go higher than the latter. The

bulb of the thermometer must rest on and between two live eggs; the bulb not to rest on the large end of eggs or where the air chamber is. It will sometimes be found that the themperature of the egg-chamber is 98° to 100°, while the thermometer resting on the live eggs will register 105°.

As to the utility of using swarms of bees for hatching hens' eggs, I, for one, do not think that it can be successfully managed here in the North; that is, where it is expected to do the incubation from start to finish. It undoubtedly will work all right by having the eggs placed under hens, and, after having been started for a week or ten days, then test out the infertile ones and place the good eggs or fertile ones over the top of a good strong swarm, as the eggs themselves will now begin to generate heat. But I do not think it will pay to fool around in trying to hatch eggs with bees, where one has plenty of hens to do the work; but where one has not sufficient broody hens then it probably would do all right to use what hens there are to start the eggs, testing out the fertile ones and giving them to the bees to fimsh, while the hens would be given a new lot to start; in this way one might get as many chicks hatched with one her as would otherwise be hatched with four or five.

PARKERTOWN, Ohio. Oct. 2, 1900.



AN SECRETION NOT THE FORTE OF OLD BEES.
BY VETHUR C. MILLER.

Some occurances in my apinry during the past season have brought foreibly to my act action things that I do not recall having some published heretofore, at least not in just the way they appeare I to me, and a brief statement of them may serve to throw light on some other puzzles.

I had a very large colony without any broad for eighteen days, at which time the queen (given meanwhile) began to lay. It was twenty-one days later before any young bees appeared, and fully another week before they were hatching rapidly. About a week before the first brood began to hatch I gave the colony some broken combs to repair, but much to my surprise almost nothing was done towards such work, and what little was done, was done with old wax-no new wax appearing-and during this time the queen was laying in these combs, one of which was broken from the top bar and was loose and shaky. Honey and pollen were coming in slowly and they had a good supply stored. Now note: When the young bees become fairly abundant these combs were quickly repaired and with new new wax, and this with a decreasing honey flow, in fact almost none.

It will be noticed that when the broken combs were given, the youngest bees in the colony were at least thirty days old. Prof. Cook and others have shown that old bees do secrete wax, and when forced do build comb, but I believe that it is the young bees that usually do the wax secreting and comb building, and on whom we must depend for comb in sections, Mr. J. H. Martin (Rambler), in a recent letter, corroborates in a measure my opinion. I have had several similar experiences, but none so conclusive, as none were so long without brood.

May not some of the differing results obtained in large and small hives and attributed to the size of the hive, have been due more to the greater proportion of young bees than to the size of the hive? May not also "watery" cappings be due to a scarcity of young bees? It is too late in the season for me to follow this up by experiments, but perhaps some of the Southern bee-keepers can throw some light upon it before next spring.

PROVIDENCE, R. I. Sept. 18, 1900.

[Since the foregoing was put it type the following from Mr. Miller has come to hand.—Eb.]

In Gleanings for October 1st. in their department of "Pickings," you will find

an article of Mr. Greiner's relating to the characteristics of various races of bees, and the comments thereon. I think this goes to prove the theory which I set forth in a recent communication to you. would be interesting to know the size of hive and system of management used by Mr. Greiner, as well as the honey resources of his locality. From some experiments that I have had with the Carniolans I believe they need a very large hive, and that then the swarming tendency is the least and the effect of a large quantity of roung bees is most strongly felt. Perhaps we are on the right track to a solution of some of the puzzles of the trade. What do you think?

In your editorial of some months ago, relating to my experiments on the development of laying workers, you used the expression that if we "were sure that no effort had been made to rear queens," the evidence there would seem to be conclusive. I wish to inform you that the colony I selected for that purpose had a young and vigorous queen of the previous season's raising, and had made no effort towards rearing a queen prior to the time of the experiment.

Yours very truly,
Arthur C. Miller.



OVING A CARLOAD OF BEES IN NOVEMBER. BY JOHN D. BINBY.

Noticing an inquiry in one of the bee-journals in regard to moving bees in cold weather, I submit the following experience.

In November last I moved 46 colonies from northern Iowa to Saratoga Co., N. V.; a distance of over 1100 miles. We began loading the car Nov. 18th. and finished unloading Nov. 28th, after a three-mile haul by wagon, making 11 days during which the bees were more or less disturbed; the actual time occupied in transit by rail being 4½ days.

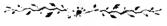
The bees were mostly in eight-frame dovetailed hives, on newly built, wired, Hoffman frames. About one-half the hives were given a 38 inch entrance, balance is inch; all with double wire cloth entrancé-closers. Covers were tacked on and no other ventilation given. About 2; were well supplied with stores, balance being light, late swarms. Hives were packed lengthwise of the car, in two tiers. no straw or packing except boards to hold the hives firmly in place, the space above the hives being packed to the roof with supers, etc. The balance of the car, to the center, filled solid with fixtures and household goods, held firmly in place by board partition, well braced.

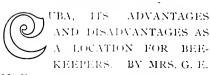
All came through alive and in good condition except one, which was on L. frames, unwired, which broke down and smothered the bees. The weather was mild for the season, being above the freezing point except at night. Bees had a chance to fly after arrival, and only one has died since putting in the cellar, Dec. 16th.

The consumption of stores during the trip was large, but, unfortunately, I have no figures as to how large. The loss in bees was surprisingly heavy, most colonies having from a pint to two quarts dead on the bottom-board. I judge these to be mostly the old bees, as the loss in cellar up to date (Mar. 10) is less than I have ever known during 15 year's experience.

Not one wired Hoffman frame was broken or damaged during the trip.

GROOMS, N. Y. Mar. 12, 1900.





MOE.

The same rule holds good in this sunny land as in other parts of the world;

that is, not so much depends on the location as on the pluck of the bee-keeper; and while some have met with good success, others have met with complete failure. There are, however, other factors which tend to failure or success, aside from those inherent in the individual; and of those it is my purpose to mention a few.

Do not understand me to say that those who have failed here have done so for want of decision or energy, or lack of knowledge regarding the business; or that those who succeed, do so solely through possessing these faculties. cation plays a great part in the matter: and the very best honey producing localities are those where one finds it the least desirable to live. The nectar is gathered almost exclusively from wild flowers, and during the winter months. Aquinaldo, a beautiful white bell-flower, which grows in swamps and other waste places, is one of the principal producers. honey is very white, and of a fine flavor. There are many other flowers of less importance, but when one is selecting a place for an apiary, it is considered the first step to look for the Aguinaldo vines. There are palm blossoms through the year, and though they give honey of an undesirable flavor, and in small quantities; yet they assist in maintaining the bees during the summer, when flowers are very scarce; and the bee-keeper considers it great luck if he strikes a locality where other summer houey-producing plants are found.

It is quite usual to be obliged to feed honey and sugar during the trying part of the year, and many have lost largely from starvation and disease the past season. One apiary, containing about 800 colonies, sustained a loss of 300; another of 400, lost 150; and still another of 113 was almost completely lost. Others have met with no losses; on the contrary, have made considerable increase. One yard of 6 colonies now contains 50, and another of 30, at the beginning of the season now numbering 118.

The months from November to February cover the principal honey flow. While the disadvantages of wintering are not to be encountered here, the beekeeper has not that long vacation from the work, and the liability to loss in the summer is as great, necessitating constant vigilance and work to prevent starving and robbing, and to keep the apiary free from moths and foul brood. Foul brood is one of the greatest disadvantages here; it seems to be an ever present menace to the Cuban apiarist.

Honey is shipped and sold in "bocoy" weighing about 1200 lbs. each when filled; and Germany is the chief market. Not so much is paid for it there, but the heavy duty bars the Cuban product from the United States.

Many of the best honey producing localities are in remote places where shipping facilities are very poor. Nearly the only way of travel being by means of oxcarts or on horseback. A new railroad, the Cuban Central, has been commenced. It is to extend through Matanzas, Santa Clara, and Puerto Principe from Havana to Santiago de Cuba. This will give shipping facilities to a large part of the island which is said to be a fine section for honey.

One has, also, to contend with pestiferous insects, such as ants, fleas, mosquitoes, etc., none of which are mere dreams. Domestic inconveniences are manifold, and few of the "Americaas," as the ladies from the United States are called, care to reside in this country.

To conclude, if one can surmount the obstacles of living without schools, churches, or society, or the ordinary conveniences of life, if one can live in a tent or a palm cabin, and pay exorbitant prices for dry-goods, groceries, freight, etc., if one can keep bees free from death and disease through the summer, one will be rewarded by an abundant flow of beautiful white honey of a fine quality during the winter.

CANDALARIA, Cuba. Aug. 28, 1900.



WISCONSIN bee-keepers will hold their annual convention in Madison on the 24th and 25th of January.

COLORADO bee-keepers will hold their State Convention in Denver, Nov. 21st, 22nd, and 23rd. The State horticulturists neet at the same time.

EXTRACTED HONEY must be in good demand. There is scarcely a day that does not bring me an inquiry asking if I know of any for sale.

SINTY-POUND CANS are most heartily endorsed by Mr. Walter S. Ponder in Gleanings. He says that he hopes the day of putting honey in barrels is past. Mr. York and the Roots think the same. It is clearly evident that those who handle honey for a retail trade prefer the cans. Manufacturers seem satisfied with barrels.

SPECIALISTS in bee-keeping are very few in Great Britain, according to Mr. J. T. Calvert, who has been visiting Enrope and writing an interesting account of his trip and having it printed in Gleanings. The great mass of bee-keepers in Great Britain are those who keep less than a dozen colonies; and who keep them either as a diversion, or to help out the store of family sweets.

MR. DOOLITTLE gives, in Gleanings, as reasons for producing both comb and extracted honey in the same apiary, that some colonies show a disinclination to work in the sections, while others swarm and leave a lot of unfinished sections. If

the swarm is put back the bees sulk and swarm again. By the use of the extractor, giving plenty of empty combs, these troubles can be remedied.

THE LANGSTROTH MONUMENT.

At last a monument has been placed over the grave of the Rev. L. L. Langstroth. It is of granite, simple and plain, and cost only \$300; but the beauty of it is that it was paid for by small contributions from grateful bee-keepers in this and other lands. That he was the inventor of the movable comb, as we now have it, is universally admitted.

OLD BEES may be gotten rid of, if there is any desire to reduce the number of colonies by uniting, by moving the hives away to a new location while the bees are flying. The young bees will adhere to the new location, while the old ones will not. This will reduce the colonies in populousness, but the weaker ones may be united, and the young bees will winter better than the old ones.

BEST BEES are secured by breeding from the best colonies. I am led to say this as a subscriber asks if, in breeding from our best comb honey colonies, would I use a hybrid if she happened to be the mother of a colony that stored four full supers of beautiful honey when the best Italian gave only one super of poor honey. Certainly I would. Such a colony might be the beginning of a most valuable strain.

INTRODUCING QUIENS by the use of tobacco smoke, is, I am led to believe, a very safe plan. Mr. A. G. Anderson reports in the Southland Queen that since he began using this method he has lost only one queen, while he lost many with the candy cage plan. His method does not differ materially from those that

have been described in the Review. At dusk the bees are smoked, the queen daubed with honey, and then dropped in the top of the hive.

Hot Wax seems to be an important addition over the corks of bottles of honey, when the honey has been heated and bottled for retailing. Those who are the most successful in marketing honey in this form, such men as Selser and Pouder, follow this practice. A tin foil cap is put on over the wax. Pouder heats the honey to 190°, but the editor of Gleanings calls attention to the fact that the general practice is to bring it to only about 180°.

SMOKE, if used in too large quantities is likely to injure the flavor of honey. At the Chicago convention Mr. O. O. Poppleton reported that the first year he was in Cuba he shipped some 40,000 pounds of honey to Mr. Muth, and Mr. Muth said that all of the honey tasted of smoke. The honey was extracted by Mr. Osborn, and his method was to have smoke pumped against the comb all of the time, and not shake the bees, using an enormous quantity of smoke.

CITY BEE-KEEPERS can get free advertising by sending out invitations inviting people to be present at the opening of the honey harvest, and see the honey taken off. Editors are not neglected, and they notice it as a matter of news and send a reporter to write up the event. Veils are furnished visitors—Considerable honey is sold in this way, and a lot of free advertising secured. Mr. Kreutzinger told us this at the Chicago convention.

HIVING SWARMS on starters is recommended by Mr. Doolittle in the American Bee Journal. The building of drone comb is prevented by contracting the broad-nest. If there is an occasional frame containing some drone-comb i can be taken out the next spring and used for a store comb, or else melted into wax. Mr. Doolittle believes that the broad-frames are filled with comb more cheaply under such circumstances than when foundation is used, and that more honey is secured in the sections.

ONTARIO BEE KEEPERS' Association will meet in the council chamber or the town hall at Niagara Falls, on the 4th, 5th and 6th of December. A first-class programme is being arranged, and it is likely that there will be a large attendance both for pleasure and profit. A most cordial invitation is extended to all bee-keepers, both in Canada and the United States. The Savory and Windsor hotels offer a rate of \$1.50 per day, and the Imperial Hotel offers a rate of \$1.00 a day.

AS OTHERS SEE US.

The Canadian Bee Journal has the following to say regarding the outsides of some of the Vankee bee journals: Gleanings has donned a neat jacket of somber green, which looks very well indeed. The Review, always seasonable, assumes the bright yellow of the Autumn leaf. Even the old reliable American Bee Journal comes to us with a new face; the cover being artistically designed and printed on a highly calendered paper.

IMPORTED QUEENS AND THEIR BEES ARE

DARK.

I presume most of bee-keepers know that, as a rule, imported Italian queens are dark and produce dark bees, but it is possible that all of them do not know it. Mr. L. B. Smith of Texas, and the editor of the Southland Queen call attention to

this fact. Many imported queens are almost black, as compared with the American bred golden Italians. Mr. Smith finds imported stock a little more prolific, quiet to handle, hard to shake from the combs, but very superior as workers. My experience has been that of Mr. Smith

Colorado now has two bee journals. The Western Bee-Keeper has been re-rescreeded, and a new journal, called the Western Apiary, has been started. Judging from the past, it will require a long pull and a strong one to make a success of bee journalism in the far West. The bee-keeping in that region may be somewhat different from that in the East, but the bee-keepers are not sufficiently numerous. Some of them may have hundreds of colonies, but they don't take any more journals than the bee-keeper with fifty colonies—sometimes not so many.

THE SECRET of building up and holding a trade in extracted honey, says Walter S. Pouder, in Gleanings, is that of putting up only one grade, and that of the best. The masses think that all honep should taste alike. If they get a jar of clover honey one time, one of basswood the next time, they think that something is wrong. Where one is constantly receiving lots of different kinds of honey, this difficulty may be overcome by having a large tank and emptying, alternately, 60-lb. cans of the different kinds of honey, and then filling the bottles from the large tank.

EEEDING BEES MEDICATED SVRUP.

Considering the prevalence of foul brood, black brood, etc., E. R. Root advises the medication of syrup when it is fed to the bees. The feeding of this medicated syrup will not cure a case of foul brood after it is well started. It is valuable only as a preventive; that is, to pre-

vent the colony from becoming innoculated with the disease. Beta naphthol is recommended as the best drug for this purpose. In an eight-ounce bottle empty an ounce package of the drug, then pour in just enough wood alcohol to dissolve the powder, and fill the bottle nearly full of water. This quantity is just enough for 140 pounds of sugar. The sugar should first be made into a syrup, then the prepared beta napthol added and the whole thoroughly stirred.

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A REPORTED ATTEMPT TO IMPORT APIS

DORSATA.

The Saturday Evening Post of Philadelphia is authority for the statement that the Secretary of Agriculture is about to make an attempt to import some of the giant bees of the Philipines. I suppose that by this is meant. Apis. Dorsata. The article admits that they can not be domesticated, but says that it is expected to turn them loose in the South and allow them to run wild and take care of themselves. I can only repeat what I have said before, that I think this an unwise move. I fail to see what particular benefit is to arise from turning these bees loose in the South, and it is barely possible that the results might be similar to those that have come about from the turning loose of other things in this country. But we won't worry just yet. may be only a newspaper story-and the bees are not here vet.

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ARE EXTREMELY OLD COMBS SUITABLE FOR BROOD COMBS?

Mr. W. T. Stephenson, of New Columbia, Ills., has been doing a little figuring, and, according to his figures, combs that have been in continuous use as broodcombs for 25 years have plastered upon the walls of their cells. 275 cocoons. He believes that so many layers of cocoons must materially decrease the size of the

cells; and, consequently, the size of the bees. In proof of this view he says that he has in his apiary a hive in which the combs have been in constant use as broodcombs for 12 years, and that the small size of the cells is plainly perceptible; and that the bees of this colony are very small when compared with the bees of other colonies. He contends that if we wish for larger bees with longer tongues, we better look to the age of our broodcombs.

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THE INFLUENCE OF RESOLUTIONS.

President Root, at the Chicago convention, called attention to the value of resolutions or endorsements by State or National associations. He had been before the Ohio legislature in the interest of certain bills, and he there learned the value of such endorsements. When he tried to interest the members in a foul brood bill, and an anti-spraying bill, about the first question asked was, "Does your State organization ask for them?" When they learned that there was no such organization, they manifested very little interest in the measures. Legislators are constantly beset by people who have all kinds of hobbies, or axes to grind; and, as it is impossible to listen to all of their claims, law-makers are compelled to confine their attention to matters that emanate from representative bodies rather than from men individually. Resolutions, suitably drawn, go a long ways in influencing legislators.

IN-DOOR WINTERING versus out-door wintering is a subject that has received a large amount of discussion. It is largely a question of locality. Mr. Root of Gleanings very fairly states the matter when he says that where cold weather lasts nearly all winter, with only an occasional day in which the temperature is above the freezing point, he would recommend in-door wintering. Or if the cold

weather, with occasional intermissions, lasts clear up to actual springtime, he would still advise in-door wintering. If the winters are somewhat open, a month of cold weather being followed, perhaps, by a spell of open weather, his advice is to winter the bees in double-walled hives in the open air. My own preference would be for out-door wintering where the climate is such as to admit of it. In this locality, one year with another, I have succeeded better by wintering the bees in the cellar.

WHY THE REVIEW IS LATE.

Soon after my return from the Chicago convention I was taken down with my annual, autumnal attack of rheumatic fever. Most of the time I was able to sit up, but there were a great many days when I was not able to even answer the Before I was really able to do much work came the moving from the old house into the new. This was quite a task as there were the household goods, the office, and the bee-hives, sections, and other bee-keeping supplies to move. We were right in the midst of this work when there came a telegram announcing the death of my father who lived in Tuscola county. Although scarcely able to take the journey, I went to the funeral and returned with apparently no bad effects. At present I am writing with a great variety of things piled up around me. Eventually, however, things will get into their proper places, and the long hard task of building a house and getting settled in it will be over, and we can all put our shoulders once more to the wheel that runs the Review, and get it out on time.

SECRETION OF WAX.

Mr. W. S. Pender, in the Australian Bee-Keeper, makes an interesting comparison, or computation, to show the amount of honey used in the secretion of

He says that about 1-7 of the wax. weight of a swarm of bees is honey. Take a 7-lb, swarm, and the whole swarm would carry one pound of honey. After such a swarm has been hived 24 hours it has been known to have built comb weighing 4 ounces. According to this calculation, the consumption of four pounds of honey would allow the secretion of one pound of wax. There are two factors here that need consideration. The bees may gather considerable honey during the first 24 hours, although Mr. Pender thinks those that fly are mostly in quest of water. Another thing: The bees composing the swarm may have had their wax pockets fairly loaded with wax scales when they swarmed.

THE LENGTH OF BEES' TONGUES.

I have been reading in Gleanings something about the length of bees' tongues. I knew that there was a variation in the length of the tongues of bees of different strains, but I was surprised to learn that there is so great a variation; indeed, it does not seem possible that there can be so much variation. The editor of Gleanings says that the shortest tongues are only 13-100 of an inch in length, while they have a queen now the bees from which have tongnes 21-100 of an inch in length. The nearest approach that they had seen to this were bees from L.P. Moore, having tongues 20-100 of an inch in length. Here is a difference, roughly speaking, of about 1-12 of an inch in the differences of the length of tongues in bees. I can't get over the surprise. does not seem possible. Why should there be such a variation in the tongues and not in the other parts of their bodies? The editor thinks that by proper selection and care in crossing we may develope a strain of bees having tongues 14 of an inch in length-long enough to reach the bottom of a great many corolla-tubes in red clover. The only practical way in which the mating of queens can be controlled with any degree of certainty is by isolation on an island, and the editor of Gleanings proposes to make some such arrangement another summer.

THE CAUSE OF "GOBBINESS" IN COMB HONEY.

Dr. Miller, in Stray Straws, in Gleanings for October 15, calls attention to the experiments of Professor Gillette with comb foundation, and says that if the Professor is correct he can not see how we can avoid the conclusion that with the best of foundation, there is less "gob" in comb honey than when the comb is built naturally. The editor agrees, saying that the Professor's experiments agreed almost exactly with those made two years ago by himself and Mr. Weed; and that he (Mr. Root) advanced the same proposition two years ago.

My dear brethren, you are all right in one respect; that of the thickness of the septum and cell-walls, but as to the character of the naturally built comb and that built of foundation—well, you don't pay much attention to that point. It is not entirely a question of quantity of material, but quality also has a bearing. Comb, after it is melted, becomes wax. It is no longer flaky and brittle; but becomes tough and leathery. It is this quality that causes the gobbiness fully as much as does the quantity of the material.

WHAT HAS THE PAST SEASON PROFITED

Vot 3

Can you tell? Have you advanced in the science of the art? Is your apiary properly equipped and is it in the most convenient location? Will you be able to handle your bees next season more rapidly and with less labor?

Can you raise better queens? you a good and satisfactory way of introducing them? Can you produce better honey? Can you put it on the market in moved to Tuscola county, this State,

more profitable way? And this does not mean get a higher price for it, but to get greater net returns. Is your capital sufficient for the business you are trying to do?

Ask yourself these questions: look over your apiary and its equipment and study well how you may advance.

As a class, we do not have the tools we need for our trade. We make some cheap substitute do when the best is none too good. Often we are "penny wise and pound foolish." We do not have enough spare hives, extra sets of extracting combs, etc. Should feeding suddenly be necessary how many have suitable and sufficient feeders? The latter was this autumn brought forcibly to the notice of a certain apiarist of New England.

If you need new implements do not begrudge the money good ones cost. Do not be afraid that you will help the supply dealer to get rich rapidly—he has no bonanza.

Take some of the coming winter evenings and think long, deep thoughts.

I did not write the foregoing. It was sent to me by Arthur C. Miller of Providence, R. I., who suggested that if I felt it right to publish it I might do so. I most heartily agree with the suggestions of my friend. I doubt if better advice could be given.

> THE DEATH OF MY FATHER.

Reference is made in another place to the death of my father. Perhaps a few works in regard to him may not be out of place. He was born 82 years ago, in St. Lawrence county, New York. In 1850 he married Miss Eliza B. Dver, of Orleans county, New York, and soon after migrated to Genesee county. Mich, where he met and overcame the difficulties and obstacles that surround pioneer life. Here were born four boys and one girl, all of which are living. Twenty-two years ago lie better condition? Can you sell it in a where he has since resided. Of late he

had been growing more feeble as the years went by. Paralytic symptoms were frequently noticed, and finally, about six weeks ago, they reached that stage where he was scarcely able to help himself, when he gradually grew weaker and weaker until he dropped away like one falling asleep.

Father was a farmer all of his life; and particularly did he delight in farm-auimals. Every animal on the farm was a pet and had a pet name. More than once have I seen a cow come up and begin to lick him on the hand or sleeve. I can remember, soon after we came from York State, our one cow wandered so far into the woods in search of better pastures that she did not reach home until the next day. Did father get a fish-pole and proceed to dress her down? No sir! He went into the house and spread a big slice of bread with butter, sprinkled on a thick layer of sugar, and then fed it to the truant. I can remember yet how she bobbed her head up and down while she was eating it, and how she followed father around afterwards, and kept sinelling and sniffing to see if she could find another sweet morsel. I could fill pages with reminiscences, but I must close by saving that father was a Christain, a kind husband and father, and an honest upright man

FEEDING BEES.

Mr. J. E. Crane of Vermont describes and illustrates in Gleanings his methods of feeding bees. His feeders are really the old, tin, pepper box style of feeder on a large scale. He has two sizes; one holding 9 pounds and the other 6. On the end in which are punched the small holes for the feed to come out, are two short tin legs, and a screw-cap for filling the feeder. To know when the feeder is full when putting in the feed, the feeder is set upon the scales while being filled, and when the scale comes down the feeder is full. Two and one-half barrels of sugar are

melted up, one pound of water being added for two pounds of sugar, and when the feeding is to be done at an out-apiary the feed is stored in a large tank holding 800 pounds: the tank being placed on a wagon. There is an arrangement for sliding this tank to the rear of the wagon box when the out-vard is reached, and there is a honey-gate for drawing off the honey. With this arrangement a man and a boy and a horse can feed Soo pounds in one day to a yard of bees many miles from home. To prevent granulation, honey is sometimes added to the syrup, and sometimes eider vinegar is used-about one teaspoonful to ten pounds of sugar.

The editor of Gleanings advises the use of a thinner syrup. He would use one pound of water to one pound of sugar. He says that no heat or acid is necessary; that the handling of the syrup, in the stewing of it down to the proper consistency, so changes it, or "inverts" the sugar as the chemists say, that there is no granulation. On the other hand, I might mention that Mr. L. A. Aspinwall of this State prefers to feed very thick syrup when it is so late in the season that the bees can not evaporate the syrup. I don't know that Mr. Aspinwall recommends thick syrup when the feeding is done early enough for the bees to properly evaporate it.

A great many have objected to feeding, or to any plan or system of management that included feeding, the objections being that feeding is such a mussy disagreeable task and likely to start robbing, etc. The trouble with feeding, as it is usually conducted, is the lack of system and proper implements. With proper utensils and the right management, the feeding of bees is a neat, clean job; nowhere near as mussy as the extracting of honey.

SURE METHODS OF INTRODUCING OUEENS.

It is a little late in the season to be talking about introducing queens. I fear that what is said will be forgotten before another season opens; but now that the story is begun it may as well be ended. There is no doubt of the infallibility of the hatching-brood plan; and when carried out according to the instructions given in this issue by friend Baldridge it is robbed of some of its objectionable features. However, it is quite a little trouble, from first to last, to introduce a queen by this method, and I should not like to go to the trouble myself unless the queen was very valuable—an imported queen or something like that. For the last two years I have been guaranteeing the safe introduction of queens if my instructions were followed. Of course, I might have insisted upon the employment of the hatching-brood plan, when probably not a queen would have been lost, but I have always felt that it would be imposing too much upon my customers. Better lose an ordinary queen occasionally than go to so much trouble with every queen that is introduced. The first year I advised the caging of the queen against the side of a comb where the bees were hatching. The percentage of lost was not great: perhaps not more than by the ordinary, eating-out plan, and perhaps not less. The great trouble seemed to be that the bees burrowed under the cage and released the queen too soon. This year I have recommended the ordinary eating-out plan, with the additional precaution that all brood be removed, thus leaving the bees hopelessly queenless. The loss by this plan was much less than by caging the queen against the comb, but there were losses. It is not true that hopelessly queenless bees will always accept a queen. Then the tearing up a of a colony, to get away the brood, demoralizes it more or less, and it does not put up much of a fight against robbers having nothing to defend but a strange queen.

Now comes the use of tobacco smoke. There is nothing new in this; but, for some reason, it has never become popular. Why this is so I am unable to determine. I have yet to learn of a loss by this method. Perhaps that is not so con-

culsive, considering that it is so little used. For the last two months I have been recommending this plan to my customers, and, so far, not a loss has been reported. I shall recommend it another year; and then will probably come enough experience to decide the matter. A quick, certain method of introducing queens will mean the saving of a good many dollars to bee-keepers.

EXTRACTED.

CLIPPING OUEENS.

The Best way of Doing it. Shalf they be Clipped Before Mailing?

Bro. Hill, of the American Bee-Keeper, in a very polite and felicitous manner, takes exceptions to the plan advised by Bro. Root and myself for the clipping of queens, viz., that of simply picking up the queen between the thumb and fore-finger of the left hand, and clipping her with a pair of scissors. His objection is that there is a liability of cutting off a leg; also, that the handling of the queen may cause her to be balled. His plan is as follows:

An ordinary pocket knife is the only tool necessary. It should have a razor edge. If the knife is not rery sharp some pressure will be necessary in order to sever the wing; but with a very keen edge its own weight is sufficient to accomplish the work instantly, without danger of cutting the finger.

Stand the frame upon which the queen is found, against the side of the hive, or have it otherwise firmly supported in a convenient position: wait until the queen stands or walks with head upward, which she will soon do ordinarily. Now, with the knife in the right hand, and the thumb and index finger of the left lightly pressed together, gently raise the tip of the left wing with point of finger and with a rolling motion, caused by a slight contraction of the thumb and finger, en-

gage the tip of the wing, and at the same instant cut off about three-sixteenths of an inch of the upper wing thus held. This is accomplished by simply giving a slight stroke of the knife across the wing against the finger-tip, without pressure.

It sometimes occurs that the queen carries her wings separately for a moment. While the novice will recognize this as his chance to catch the wing more easily, and hasten to improve the opportunity, the momentary separation is but the result of some excitement, and unless she is standing still, in a very convenient position, it is usually better to allow her to adjust her wings to a natural position before beginning the operation. Should both wings be caught when endeavoring to take but one, the right one may be instantly released by rocking the thumb in the opposite direction.

Should the queen be moving when wing is caught and the operator has not become sufficiently expert to do the clipping instantly, the hand should move steadily as does the queen, so that she

shall not pull or twist the wing.

With a little practice the clipping is accomplished so easily and quickly that the queen gives no apparent sign of knowing that she has been touched at all; in fact, only the tip of the wing has been touched, and at the same instant it has been so cleverly removed that she continues without interruption to look for vacant cells in which to deposit eggs. Nothing could well be simpler; even a child, if properly instructed, can clip queens with a knife as well as the experienced beekeeper. Drones and workers afford excellent practice for the beginner, until he has learned just the proper movement.

I have no doubt that, after practicing awhile "on drones and workers," as Bro. Hill suggests, one could clip queens successfully in the manner that he describes. I have never tried exactly the plan that he gives, but to all plans of clipping on the comb I have found the objection that the queen becomes frightened the moment she is touched. It is possible that with with sufficient practice this objection can be overcome. I have much confidence in what is recommended by Bro. Hill.

Just here another point comes up: Some bee-keepers who are buying queens wish to have them clipped before they are introduced. If they are clipped they can not fly away when they are liberated; and there is the satisfaction of knowing that the queen found afterwards in the hive is really the queen that was introduced. In this case the queen can not be clipped upon the comb; that is, unless she is clipped by the shipper. I see that Gleanings and Dr. Miller are advocating the clipping of queens before shipment. I believe that the Roots now clip all of the queens that they send out. One of the reasons given for this practice is that disputes arise regarding the identity of the queen. A tested queen is accused of producing hybrids. If an examination shows that she has perfect wings, while the queen sent out was clipped, it shows that the tested queen was lost in introducing, and that another queen has hatched and taken her place. It is evident that this practice often affords considerable satisfaction to the shipper. I know that I have often been accused of sending out an inferior, unfertile, or hybrid queen, when the queen that I had sent had been lost in introducing, but there was no way of proving it. The shipper and the men who wish their queens clipped would be satisfied with this plan; but how about the men who don't clip their queens nor wish them clipped? It seems to me that it is not exactly fair to them. If I did not wish my queen clipped, and had not ordered it it clipped, I should feel quite a little vexed to receive a clipped queen.

HONEY VINEGAR.

How to Make a First-class Article for Market.

All the great industries and manufacturies look most carefully after what are called by-products. Look at the number of products that are utilized in the refining of crude petroleum—from vaseline to axle-grease. See how carefully every part of an animal is saved in the great slaughter-houses. The horns are made into combs and buttons; the bones into knife-handles, and bone-dust for use as a

fertilizer; the feet for making glue and neat's foot oil; gelatine comes from the joints near the foot; pepsin from the stomach of logs. But why continue the list, for as one of Armour's agents said last fall at the Illinois fair, the only part of the pig that is lost is his "squeal."

Bee-keepers have done something in this line by saving all of the waste bits of comb and rendering them into wax, but very few, indeed, have done anything towards saving the waste bits of honey. In even the best regulated of apiaries there will be occasional "musses" of houev to be cleaned up; there will be the washing of dishes that have contained honey: there will be honey that can be washed from the cappings when honev is extracted. All these odds and ends saved during the year, and made into vinegar, and it can be done almost as easily as not to do it, means several dollars. For this reason, and because there is often dark or fall honey that can be sold only at a low price, it would be a profitable thing for some bee-keepers if they would start a vinegar factory, on a small scale, in connection with their apiarv. Just to show you how easily this may be done, I copy the following from Gleanings. It was written by Mrs. A. J. Barber, of Colorado.

I have had so many inquiries about making vinegar lately, that, being very busy, I can not answer by letter, so I will write to Gleanings for all. To give short

directions, f will say:

Use about one pint of honey to the gallon of water—you will—soon—be able to tell by the taste when it is sweet enough. Put it into a keg or—barrel with a good tight head, and leave—a hole not larger than one inch for ventilation. Keep it in a warm place and put in some—good vinegar or yeast to start it. After it gets to working, draw off a pailful now and then and pour it back; or if—you have more than one keg, pour from—one—to another. It helps new vinegar to—put—old—vinegar into it; but it spoils the keeping—qualities of the old vinegar—into it.

We save all the washings from the extractor, tank, strainers, and cappings, for

vinegar. We wash the cappings by pouring warm water through them again and again, until about all the honey is out of them. They are then rinsed by pouring a pail or two of cold water through, when they are in fine shape for the wax-ex-The water is all put into the tractor. vinegar barrels. It took us two years to get really good vinegar from the start in new barrels. Now that we have our old sour barrels and good vinegar to start with we can get good vinegar this season from last year's washings. For the last four years we have made from four to twelve barrels each year. We have twelve for market this year, and now at the last of July four new ones coming on for next year. We expect to make several more before the season closes. Each barrel should be cleaned every other year. Unless this is done the "mother" will begin to decay and break up, making the vinegar flat in taste and muddy in color. The barrels that we started vinegar in this spring had the sweet water put in with the remnant of list year's salable Next spring the vinegar in vinegar. them will be drawn off and put into clean barrels to keep until sold. we get an order for a barrel of vinegar we draw off again and put into a clean barrel. By this time there is but little "mother" forming, as the vinegar is ripe and will keep indefinitely.

We have a house specially for our vinegar. It is a double-wall frame with a teninch space between walls, packed with sawdust. The ceiling is covered with several inches of sawdust, and the vinegar keeps nicely all winter. We put the barrels into the house in November, and take them out in April. The vinegar is drawn off and put into a clean barrel. The head is then taken out of the one just emptied, and it is well sembled with water and a stiff broom. When clean it is reheaded, and the contents of the next least least 1 m of the contents. the next best barrel drawn off and put into it. Thus the barrels are cleaned and the vinegar put in shape for market. We have a long low bench or platform for the burels, where they stand in two rows. The first barrel drawn off is placed at the east end of the south row. That is No. 1, as it is the first to be ready to sell from. The next barrel drawn off being next best is placed next to No. 1 on the row, and is No. 2. So we go on till we get to No. 12. When we sell a few gallons from No, I we draw from No 2 and replenish it; draw from No. 3 and fill up No. 2; from No. 4 and fill No. 3, until we have gone through and left the empty place in

No. 12. When No. 12 is empty, or nearly so, we fill it with sweetened water again, and it makes No. 1 for next year. Nothing helps so much to make vinegar clear and sparkling and sharp as the working from one barrel to another. It seems to act like kneading on dough. It sounds, to tell of it, like a lot of work; but, really when one has good faucets in all the barrels it doesn't take long to run a few pailfuls from one to another of the whole lot. I try to get at mine once a month, and oftener when we sell a large quantity.

Our neighbors come to get honey vinegar in preference to cider vinegar at the stores. We have kept some in the stores, but have never had enough to supply them yet. We use all kinds of refuse or waste honey, such as broken combs and dark unfinished sections, and this year we had about 300 pounds of dark strong honey that came from weeds before alfalfa bloom. That will go into the vinegar next year if I don't need it to feed my bees in the spring.

I believe the secret of success in the bee-business lies in looking after every part of the business, and saving every thing produced; and what can not be marketed as first-class honey should be

turned into first-class vinegar.

I have been asked if honey vinegar will keep pickles. I have put up quantities of them in the last three years, and have never lost any, but have sold a great many, both of whole and mixed pickles. We are using mixed pickles now that were put up last August, and they are as firm and brittle as they ever were. If the vinegar is old enough, and has been properly handled, it is of the very best quality for pickling or anything else that vinegar is used for.

SELLING HONEY IN POOR YEARS.

Limiting the Commission man as to Price Sometimes an Advantage.

Considerable has been said of late in the Review in regard to the marketing of honey. As this is the time of the year when most of the honey is sold, such discussion is certainly timely. The point of limiting the commission man as to the price at which the honey is to be sold has been touched upon, and the advice given has been that a producer ought to know his ground pretty well before taking such a step. The following article from Mr. H. D. Burrell, and published in the American Bee Journal, shows one instance in which this plan proved profitable; and, better still, it tells the conditions, or the reason why it was profitable.

A very small crop of honey is reported from nearly all sections this season. Because of this fact, it seems to me the present quotations for honey in the city markets are too low. There has been a sharp advance in prices in most lines of goods in the past 18 months—why should not

honey prices advance also?

A little experience of mine has a bearing on the matter. Some 12 or 15 years ago I was fortunate in securing a good crop of fireweed honey. We lived then near a large tract of land over which a fire ran the year before. In this country fireweed grows, usually profusely, for one season after such a fire. Then there is little of it seen until after another fire, which may not come for several years. In this particular year, bee-keeping neighbors, who lived out of bee-range of this fire-swept tract, got a poor crop, and I had little except fireweed honey. This honey is light in color, and of good flavor, and will pass for clover honey, except with experts.

When the comb honey was ready for market, I packed about 500 pounds and went to Chicago. The year before there had been a large crop, and prices had ruled low for those times, and there was still some old honey in the commission houses there. I talked with many commission men. They thought about 15 cents was the right price for honey-possibly 16 for a fancy article. I knew from various sources the honey crop was light, and decided my honey must sell for more than that. I selected a good house, and told the manager he could have my honey if he would hold it for 20 cents. "Well," he said, "we have room to store it, and can hold it, if you wish, until you order it sold for what it will bring. But there is no use trying; we can't sell it for that price." "All right," I replied, "when I want it sold for less I will write you.''

Three days later a card came saying the honey was sold, and they could use more at the same price; that "buyers thought it an extreme price, but the quality was so fine, and the packing so attractive, it sold readily."

In a short time my comb honey was all

sold at 20 cents.

Now, can't a moral, or several morals, be drawn from this little story? First, it pays to understand our businsss, whatever it is, and attend to it ourselves, in an intelligent manner. I was richer by a considerable sum than would have been the case had I left all to the discretion of the commission man. Take the papers, and keep posted. All progressive honeyproducers know there is not much honey to come forward this season. There is a class, and not a very small one either. who will have good honey at almost any price.

I have sold honey, a great many tons of it, as well as other produce, through commission men for over 25 years. have frequently interviewed them, and I think I understand them pretty well. am glad to be able to say they are most of them very fine men, and my dealings with them have almost always been very satisfactory. But they are between two fires-shippers and buvers. They have friends, often heavy buyers, whom they are anxious to please and hold, and it is not strange that they will often do so at the expense of shippers. Put it out of their power to do this with rour honey this year by limiting the price. If not in too much of a hurry to sell, you can get a good price for all there is to sell. course, this plan will not work so well in flush vears.

I now produce only extracted honey, and have a good home market for most of it. If I had comb honey this year, and wanted to sell it through commission houses in Chicago, or any other city, I would induce honey-producing friends to pool their interests with mine, put up the honey in attractive shape, go to the market and explain the situation to a half dozen or more good houses in the selling district, and fix the selling price at a fair figure, considering the probable supply and demand. Seiling honey in many places at the same price, buyers would soon learn that they must pay a good price for honey if they got it, and would pay it just as readily as a low one.

WHAT'S THE TIME?

A booklet with this title, just published by the Chicago, Milwaukee & St. Paul Railway, should not only be in the hands of every traveler, but should have a place on the desk of every banker, merchant or other business man.

The four "Time Standards" which govern our entire time system and which are more or less familiar to most of the

traveling public, but by many others little understood, are so fully explained and illustrated by a series of charts, diagrams and tables that any one who chooses can become conversant with the subject in question. There are also some twentyfour tables by which almost at a glance, the time at any place being given, the hour and day can be ascertained in all the principal cities of the world.

A copy of this pamphlet may be had on application to Geo. H. Heafford, General Passenger Agent, Chicago, enclosing two-cent stamp to pay postage.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee - Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs un-even or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission-the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

NEW YORK -Receipt of comb honey are NEW YORK - Receipt of commons, were light. There is a good demand for all grades and we quote as follows: Fancy white, 17 to 10 No. 1 Amber, 1. to 14! TAmber, 0! to 11: grades and we quote as follows: Taker, white, 1s to 10; No. 1 Amber, 1 - to 11; Amber, of - to 11; Buckwheat, unglassed, to, Buckwheat, glassed or cartons, 11. White extracted, in barriels, 7 to 7; Light amber ext., in barriels, 0 to 7; Buckwheat ext., in kegs, at two Beeswax in good demand at 28 cents per 1b

FRANCIS II. LEGGETT & CO.

Sept 18. W. Broadway Franklin & Varick Sts.

NEW YORK Comb honey, of all kinds and grades, is in very good demand, and we expect prices to hold firm - Extracted in better demand than during the past three months, but there is than during the past three months, but there is enough supply to meet demand. We quote as follows. Eancy white, is tor. (No.) white right stage value, its fancy amber, i. No.; amber i.; fancy dark, ii; No.; dark, io. white, extracted, ii; to stage white, extracted, ii; to stage white, extracted, iii; to stage white, but stage with the stage with the

120 West Broadway, New York. Oct. 3.

CHICAGO—Honey is selling slowly at present at the following prices: Fancy white, 16; No. 1 white, 14 to 15; fancy amber, 12 to 13; No. 1 amber, 11; fancy dark, 9 to 10; No. 1 dark, 8; white, extracted, 7½ to 8; amber, 7; dark, 6 to 6½; beeswax, 28.

R. A. BURNETT & Co.,

Oct. 2. 163 So. Water St., Chicago, Ill.

CHICAGO—From this time forward we will have a large demand for comb and extracted honey. Prices at the present time are as follows: Fancy white, 15; No. 1 white, 14; amber, 12 to 13; dark, 10 to 11; extracted, as to color and package, 6 to 9; beeswax, 28. We are cash buyers, or will handle on consignment. Always willing to follow instructions.

S. T. FISH & CO.,

Sept. 7.

189 So. Water St., Chicago, Ills.

KANSAS CITY—Market is ffrm, and movements brisk at the following prices: Fancy white, 15; No. 1 white, 14; fancy amber, 13; No. 1 amber, 12; white extracted, 8; amber, 7; dark, 6½; beeswax, 30.

W. R. CROMWELL, FRUIT & CIDER CO., Successors to C. C. CLEMONS CO.,

Oct. 4. 423 Walnut St., Kansas City, Mo.

BUFFALO - Lightest receipts for many seasons, up to this time, indicating high values. Demand is excellent, as quoted. Fancy white, 16 to 17; No. 1 white 15 to 16; fancy amber, 13; to 14; No. 1 amber, 12 to 12¹2; fancy dark, 11 to 12; No. 1 dark, 10 to 10¹2; white, extracted, 5¹2 to 6¹2. Beeswax, 28 to 33.

BATTERSON & CO.

Oct. 2. 167 & 169 Scott St., Buffalo, N. Y.

WANTED-HONEY Would like to hear

from parties having honey to offer.

Wanted Extracted Clover and Basswood, such as suitable for bottling trade; also Fancy White Comb-Honey in no-drip shipping cases. I PAV PROMPTLY ON DELIVERY, and refer you to the A. I. Root Co., or The Brighton German Bank of Cincinnati, Ohio.

C. H. W. WEBER,

2146 Central Ave., Cincinnati, Ohio.

THE

A. I. ROOT CO.,

10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight.

If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.



so carry a complete line of other supplies. Catalog free. R. H. SCHMIDT & CO., 9-99-tf. Sheboygan, Wis.

Please mention the Review.

I have several hundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

FOR SALE.

Apiary of 40 colonies of Golden Italians, in 10-frame Doolittle hives, together with fixtures. Everything

fixtures. Everything up to date. Also beautiful buildings, consisting of 8-room, 2-story dwelling, barn and other outbuildings. Peach and pear trees, grapes, etc., in bearing. No disease. Healthy cl-mate Mild winters. No better locality to be had than this to those who desire to embark in the bee business. Average yield of surplus honey, 50 pounds to the colony. Photographs sent to those interested.

J. W. MINER. Ronda, N. C.

MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U. S., and have testimonials from satisfied customers in the U. S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 1st, \$1.50 cach. After June 1st, tested queens, either strain, \$1.00 cach; untested, 75 cts. each. One-frame nucleus with queen, \$1.50; two-frame, \$2.50; three-frame, \$3.25.

4-00-tf

J. W. MINER, Ronda, N. C.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Sonthland Queen," the only bee paper published in the South. All free for the asking.

3-99-tf

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas,

A B C OF BEE CULTURE.

1900 Edition. The only Encyclopaedia on Bees. 500 Pages.

The last edition, 5000 copies, issued in October, 1500, was exhausted in the short space of one year. Even before the edition was out of the press, 1500 copies had been sold; and before thirty days had passed, 1000 more copies were taken. We immediately set to work to print a new edition. While the edition of 1800 was more throughly revised than any previous one, that for 1000 has received even larger additions of new matter, so that the book from beginning to end is almost entirely new. It now contains 500 double-columns pages. It has been most carefully gone over by Dr. C. C. Miller, who has prepared a new set of comments, and by Prof, A. J. Cook, of Pomona College, Cal. As before, old subjects have been rewritten. Descriptions of obsolete methods have in all cases been stricken out, and the very latest put in their place.

This 1900 Edition marks the 75th Thousand.

It is in many respects superior to any previous one in regard to typographical appearance, quantity of new subject-matter, and general revision of old subjects, for we are now building on the knowledge and experience of these latter days, when such wonderful strides are being made.

For the Veteran as well as the Beginner.

While the book is, in the true sense, an A B C of bee culture, in that it is adapted to the requirements of beginners, it is also a comprehensive N Y Z of the subject; for no veteran, no matter how extensive his experience, can afford to be without a work of this kind, containing as it does a carefully prepared dissertation on every late method or practice known to the business. All the bee-literature of past ages, all the current literature of this and every other country, has been carefully spanned; and whatever there is that is new and valuable has been incorporated in this work.

High-Class Engravings.

The most expensive half tone engravings, taken direct in the majority of cases from fine clear photos, adorn its pages. Besides so full-page illustrations there are something like soo smaller ones, fully setting forth the exact MODUS OPERANDI of every method. We are confident that this work will save any one who keeps even a few bees, ten times its cost in a single year.

While the book has been enlarged, and hundreds of pages have been rewritten and revised, the price will be the same as before \$1.20 post paid, or \$1.00 by express or freight with other goods; or when sent with our journal, GLEANINGS IN BEE CULTURE, which is a constant appendix to the A B C book, a journal beautifully printed and illustrated, 42 pages, for the very low price of \$1.75 for the two. For quantity of up-to-date bee-literature there is nothing else offered at this low price.

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W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coning season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

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I shall probably make no more exhibitions of bees and honey at fairs - I have too many other irons in the fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them.

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new, but I would sell them at 15 cents each.

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ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

19



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This is the original one-piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$13.00; 10,000 for \$22,60.

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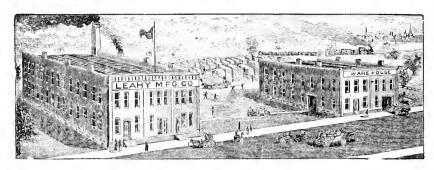
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REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superbindeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



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Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

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Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progres-

sive Bee-Keeper. Address

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Losses are not always the result They may of the same cause. come from starvation; from poor food; from improper preparations; from improper protection; from a cold, wet, or possibly, a poorly ventilated cellar, ctc,, etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points consult "ADVANCED BEE CULTURE." Five of its thirtytwo chapters treat as many different phases of the wintering problems.

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Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free.

W. T. Falconer Mfg. Go.,

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Rep W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

Honey FOR Extractor SALE

I have a nearly new, Van Allen & Williams Honey Extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed automatically—without stopping the machine. The regular price of this machine is \$20.00, but, as this has been used some, I will sell it for \$15.00. I would exchange it for bees, or anything else I could use.

H. E. НІЦЦ, Ft. Pierce,

No Fish-Bone

Is apparent in comb honey when Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a very thin base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wired.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

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63

W.O. Victor,

QUEEN SPECIALIST Wharton, Texas.

I have as good stock as there is in the United States, so says the A. I. Root Co. Besides having selected choice queens from my own stock from time to time during the entire season, I have bought select queens from a number of breeders of high repute. In addition to these I have a dozen imported queens due to arrive direct from Italy any day. To this add an extra select tested daughter of the A I Root Co's \$200 red clover queen, the bees of which have a reach of 21-100 of an inch, and 3 select queens of Moore's long tongue strain, and I feel that my stock is at the top of the present development of superiority. Untested queens, \$1.00; tested queens, \$1.50 select tested queens, \$2.50 to \$5.00. Root's goods at Root's prices, plus the car load freight.

Wm Bamber,

Of Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell Send for samples very close. and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-11

the best smoker leverused engine. I have one already. It is Please send me one brass smoke Enclosed find \$1.75 Henry Schmidt

Hutto, Tex., April 10, 1900

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At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin

Violin for Sale.

I am advertising for the well-known mannfacturers of musical instruments. Jno. F. Stratton & Son, of New York, and taking my Stratton & Son, or according to the strategy of the strategy o trimmings, price \$14,00. The now is of the americal snakewood, abony frog, lined, inlaid (pearlined dot) pearl lined slide, German silver shield, abony screw-head, German silver ferules, and pearl dot in the end, price \$2.50. The case is mostly with current ton, varnished, full-lined. is wood with curved top, varnished, full-lined, is wood with curved top, variance, minimos, with pockets, and furnished with brass hooks, and handles and lock, price \$3.50. This makes the entire outfit worth an even \$20.00. It is exactly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some instruments here that cost several times as much. I wish to sell this on tit, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be returned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines. Iowa, manufacturer of and dealer in Apiarian Supplies. Send for circular.

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I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girl. a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saving what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

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We furnish a full line of s pplies at regreta prices. Our specialty is Cook's Complete into J. H. M. COOK, 62 Cortland St., V. Y. C. J.

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Great Clubbing Offers.

My friends, how many of you are reading some of the many, most excellent magazines of the day? If you are reading none, you are missing a great treat. Perhaps you regard them as luxuries. Possibly they are in some instances. They certainly help to fill out our lives and to give us broader views. They are like windows that allow us to look out over the wide world. This life is not wholly one of dollars and cents—at least it ought not to be. Enjoyment, pure and simple, enjoyed just for the sake of enjoyment, is desirable and beneficial. To many there are few things that are more enjoyable than the bright pages of a really good magazine. To those who wish to give the magazines a trial, and to those who are already reading them, I can offer some of the lowest clubbing offers that have ever been made. Here is what I have to offer:

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Success, Current Literature, McClures, Home Magazine, and the Review for only .....$4.00
Success, Current Literature, McClures, Cosmopolitan, and the Review for only .....4.00
Success, Current Literature, McChires, Pearson's, and the Review for only
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Success, Current Literature, Pearson's, Home Magazine, and the Review for only ... 3.75
Success, Current Literature, Pearson's, Cosmopolitan, and the Review for only
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Success, Current Literature, Home Magazine, and the Review for only
Success, Current Literature, Cosmopolitan or Pearson's, and the Review for only
     (Review of Reviews, NEW SUBSCRIPTIONS, will be sent in place of Current
      Literature in any of the above combinations if desired.)
Success, McClure's, Home Magazine, and the Review for only .....
Success, McClure's, Cosmopolitan, and the Review for only ...... 3.25
Success and Cosmopolitan, and the Review for only ...... .... 2.50
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All of the foregoing are monthly magazines, and the regular subscription prices are as follows: Success, \$1.00; Current Literature, \$3.00, Review of Reviews, \$2.50; McClure's, \$1.00; Home Magazine, \$1.00; Pearson's, \$1.00; Cosmopolitan, \$1.00. A little figuring will readily show that the offers are unprecedentedly low; and I am very glad, indeed, that I can make them. Address,

W. Z. HUTCHINSON, Flint, Mich.



APIARY OF J. COLBY SMITH, WILLOW GROVE, DELAWARE.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers. \$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL XII, FLINT, MICHIGAN, NOVEMBER, 10, 1900. NO.II.



NEAT DELAWARE APIARY, AND HOW IT IS MANAGED FOR COMB HONEY. BY J. COLBY SMITH.

This apiary is situated nine miles below Dover, 3½ miles west of Woodside "Del. R. R.," and six miles from Mason and Dixon line. It is 144 feet long, and 72 feet wide, and faces southeast. On the southwest there is a hedge for a windbreak; and on the west, northwest, and north, a light board fence three feet high. The fence is utilized as a trellis for grapes. You will notice in the picture that four rows of hives face the southeast, and one row the northwest, and I will say here that I do not notice any particular difference in the way they face—that one colony does equally as well as the other.

When I first started I had some difficulty with the weeds and grass. I first tried sawdust to keep them down. It was too wet in a wet time and too dry in a dry time; and it blew into the hives. Then I tried sand; which was equally as bad in another direction, as the rain would dash sand up against the sides of the hives, and I would have them to clean after a shower. Finding that neither sawdust nor sand would answer, I removed sawdust, sand, and weeds, and do not allow

anything to grow, excepting apple trees, (which are two years old) and rose bushes; which are mostly hidden in the picture by the hives. The building in the distance is the honey house of galvanized iron. Where my little grandaughter sits is the workshop where I make my mistakes.

There are 80, eight-frame Dovetailed hives. The alighting boards are movable, and are painted, alternately, red, white, blue and yellow. I think this is an advantage; as it enables the young queens to find their home.

I work principally for comb honey; practice contraction of the brood-uest; and get the honey from the swarm.

Shallow brood-chambers won't answer here; as the bees put too much pollen in the sections. We have both a spring and a fall-flow of honey, and remove the supers with bee-escapes; which I leave on until the next spring. There are wintercases lined with paper which fit the bottom boards, and where the cases are put on the hives in the fall a cork mat is used on the bee-escape, which is already on the hive.

The shade-boards seen on the hives are the covers for the winter cases.

I prefer natural swarming; believe in clipping queens; and all that I have done

in the bee-business I have copied from others, excepting one thing. I have four wire cages which will sit over a hive, and when I have swarms enough in the air at a time, and more issue, I slip the cages over the hives. If I have a nucleus not strong enough to defend itself, I slip on the cage. If I have a hive the bees are trying to rob I put it over the hive. They can still see the hive but they soon get tire I of butting against the wire.

There are several advantages of having a clean surface in the yard: first, there is no grass for the clipped queens to hide in; second, the ants do not bother, as a maping and keeping the ground clean interfere with their hiding places.

You will observe a fountain in the center of the picture. I find it a great solvantage to have water handy for the bees as well as one's self. Directly behind the fountain you will also notice a Cannu Lilyin full bloom, the blossoms appearing above the top of the fountain.

Criticism of this apiary is wanted.

WILLOW GROVE, Del. Sept. 24, 1900.



OW CAN WE SECURE MORE
THOROUGH AND UNIFORM
ENPERIMENTS? BY A. C.
MILLER.

I think all bee-keepers will agree that at present we lack the means for securing thorough and accurate information concerning many of the problems of apiculture. Experiments along any particular line may be conducted by quite a tarber of persons, and yet for want of a critical formular of procedure, of repetition ing several successive seasons, and of an reports, they lose a great deal of the value.

s there are no apicultural experiment
rs to which we can submit problems
Fad, can we not find among the beeis of North America enough enrests who will, for the love of the
scence, devote some united effort to the

securing of accurate statistics? Not that material and use of colonies shall be given entirely without recompense, as that is rather too much to ask, but can we not devise some system whereby these expenses can be met? I would make these suggestions and ask for comments and criticism, and then perhaps we may hit upon some feasible plan:

Let the editors of our leading beepapers name, say, three bee-keepers as a managing committee. To them shall be sent all suggestions for experiments. From those persons who volunteer to conduct the experiments they shall select such a number as they deem sufficient, and in making such selection endeavor to get them as widely distributed as possible. From subjects offered for experiment or from ideas of their own, they shall select those deemed most urgent and important, and then apportion them among those persons whom they think best located or adapted to make the trials. They shall specify all the details and conditions under which the experiments are to be conducted so that all may work in unison. They shall furnish blanks for the reports.

The expenses would be these: Stationery, printing, postage, use of colonies (except where experiment yielded honey returns), and in some cases perhaps special supplies. The value of use of colonies might be somewhat difficult to determine, but probably could be mutually agreed upon.

Now how may these expenses be met? Would the publishers of the bee papers unite in defraying them for the sake of having the reports to publish, or would it be better for all bee-keepers who desire them, to subscribe enough to cover all expenses, including a copyright?

That the reports of experiments thus conducted would be of much value to all bee-keepers, there can hardly be a question, and pending the establishment by the government of experiment stations, either in connection with the present agricultural colleges, or separately, it seems to me that the foregoing or some

similar method would be a great step in advance. Even after government stations are in operation it would be a help to continue this system as a check upon and supplement to the others.

PROVIDENCE, R. I., November 2, 1900.



ATERAL COMMUNICATION
IN SUPERS CAUSES A BETTER FILLING OF THE SECTIONS. BY LOUIS SCHOLL.

It seems, judging from the various articles that have appeared in the different bee-journals, that many do not know what causes the better filling of sections; and while some of the great lights give certain reasons, there are others, again, that are oposed to them; and some that even trot out their proof, resulting from experiments made with the different kinds.

There are several who have done something in this line, but time and space prevent me from mentioning all.

Mr. F. L. Thompson is one who has said much on this subject, and has also tested the worth of different kinds of separators and super arrangements, but he has never given any real cause of better filled sections.

In the Review of January 1899, Mr. Daggitt has an article, in regard to fences and other perforated or open separators, in which he says he has never looked favorably on such separators; and that the whole matter seemed to him like this: If separators with openings through them were better than closed separators, then wire cloth separators would be still better, for they would give more free communication between the combs, and no separators at all would be best of all, for there would then be no obstructions between the combs. He referred to the Betsinger super with wire cloth separators and tall plain sections; and that he has secured comb honey, both with and

without separators, but never noticed that the comb was any better attached to the wood of the sections when secured one way or the other.

In conclusion he says that it is to be hoped that we will be able to arrive at the truth of these things in the near future.

In an editorial of the same number you say: "Some of us have thought that the better filling of the sections secured by the use of the plain sections and fence separators was the result of the more free communication afforded by the openings in the separators;" and referring to Mr. Daggitt's article, you quote, "if better filled sections are the result of more free communication, then the laving aside of separators entirely, ought to result in the best filled sections, but does it? doesn't." Now I must say right here that I think I am right in changing that answer to, "Yes: it does."-provided the sections are used without separators in the right way.

I honestly believe that free communication in and throughout the section-super has more to do with the solid filling of the sections; but it must be of the right kind.

Again, in the Extracted Department of the April number of the Review, under the heading of "Supply-dealing editors; also something about plain sections," you say, among other things, regarding this matter, that you are willing to admit, and have admitted, your belief that the use of plain sections and fence-separators leads to a more perfect filling of the sections, and think that any one who is not prejudiced will admit this upon seeing a crop of honey thus produced; but think there ought to be some further attempt to discover exactly what it is that causes the more perfect filling.

After comparing sections whose side edges extend out and meet the separator, with the plain sections, where the cleats of the fence extend out and meet the plain section edge, one being exactly like the other, there is no difference, and it

seems as though the more free communication afforded by the open separator was the only point left.

But then there is Mr. Daggitt's opposition, that sections filled without the use of separators were no better filled, if as well, as those where separators were used.

Now right then and there, when you said:— "In this connection it would be well to remember that with old style sections and no separators there is no *lateral* communication;" you have struck right on the truth of the whole matter, and by giving the experience of Mr. Byron Case, with the Betsinger case, you also give the very proof of it all.

In this case the separators are fixed; fastened solidly in the case. The sections are of the plain style and are held exactly bee-space from the separators—thumbscrew pressure keeping them in place. He says that the bees fill these sections solidly, exactly as they would a brood frame.

So, as I said before, if you arrange your sections right, placing them in the supers, the rows spaced the right distance apart, thus providing free communication all through the super, and in every direction, and especially right around the edges of the sections, all around, where it is the most important feature in securing the very best filled boxes of comb honey, you will have well filled sections. Is not every row of sections just like a brood-frame with cross-sticks in the frame, when used without separators?

This, however, is not the case with the old style sections, with which some have tried their experiments, on account of no lateral communication—the main and most important feature was missing.

There being objections to the non-use of separators, and as such are indispensible to a great many, and most necessary in securing straight combs, separators have been devised to carry out these points of free communication just where needed; viz.; all around the edges of the sections where it is the most important.

I find that Mr. Aspinwall was the first to use such a separator with upright slots across the separator next to the edges of the sections, these being spaced from the separator by means of spacing buttons on the edge of the separator.

Also the Hyde-Scholl separators were gotten out for the same purpose, besides giving free communication through the separator, by slots lengthwise, like those of the fence.

Such separators are more expensive to make than others, but they accomplish that for which they were intended.

HUNTER, Texas, March 22, 1900.





HUNK HONEY OF THE SOUTH. IT GETS SOME HARD KNOCKS BY E. T. FLANAGAN.

Are we to go back to the methods of our forefathers? Were the movable frame, the extractor and comb foundation, invented only to enable us the more easily to obtain "broken comb," alias, "chunk honev?" Shades of Langstroth, Ouinby, and Grimm, defend us!! Yet, from the tenor of the editorials of one of our bee papers, and the articles in some of our otherwise progressive journals, such seems to be the fact. ally has Friend H. H. Hyde, of Hutto, Texas, taken up the matter, and seems to be pushing it for all it is worth. Let me quote from an article in the February, 1900, Progressive Bee Keeper. honey is cut out and placed in cans holding from 6 to 60 pounds. When full, extracted honey is poured in to fill all holes, and to finish up the weight; and, being left floating in extracted honey, it can be shipped with as little loss as extracted honey. In the South where this kind of honey is known, the demand exceeds the supply." Is this true? If so, how can you prove it? "The sales of this honey have also reached Oklahoma, and Indian Territory, and are fast approaching Kansas City and St. Louis, Mo." Is this possible? If I have time I may say a word about one of those sales made in St. Louis. "One of the principal merits of the production of this kind of honey is the fact that at least from one-half more to as much again honey can be produced than with sections." Is this a fact? so, it is important, zery important. have heard something like this claimed in regard to the production of extracted above comb honey, but hardly in regard to comb. A little light here would be very acceptable. The only drawbacks that friend Hyde knows of are that the honey will candy in cool weather, and that you will have to educate people up to using it. The latter case I guess will be like that of the old darkey who taught his horse to live without eating, but just when he had accomplished it, the horse died.

I cannot conceive how a wide awake, progressive bee-keeper could advise or adopt such a primitive method. Panch's advice to those contemplating matrimony, would apply here—"\(\int m\)\"."

Friend Hyde seems to think that there should be fine section honey for the wealthy, and "chunk" honey for the masses. Maybe so; but what is the matter with good, pure, well-ripened, extracted honey? Can any one under the canopy of heaven tell us what pieces of broken comb add, either in appearance or in flavor, to extracted honey? That is all the advantage that "chunk" honey has over extracted, if it be any advantage at all. Perhaps friend Hyde may say that you can take the comb honey out of the can without bre doing it all to pieces. Can ac? If any one thinks so, let him try an experiment along this line. Take a vessel as deep and as wide as an ordinary 6-gallon can used for shipping extracted honey, all it it if full of choice comb honey, cover it with good, thick, extracted honey of the same quality, and in a few days try with knife, spoon, ladle or paddle, to dish it out to a customer, as the retailer has to do and note if that fine, fragile comb is not broken into hundreds of small pieces, it being impossible to remove it from the can (a deep narrow one) without so crushing it. In what respect is it now better than good, clear, pure, well-ripened extracted honey? Is it not, if anything, inferior; especially so far as regards appearance? Now continue the experiment a little further. Wait a few weeks until this mess of broken comb and extracted honey has granulated. Has that improved it? Try it and see, and be convinced. The proof of the pudding is in the eating.

Possibly, after a long siege of "hard tack," and "so xbelly," or "corn dodger and black coffee," and the total absence of fruit and vegetables, one could relish such a mess, and could give it such a recommendation as the following from one of our leading lights in apiculture; "One of the nicest sweets in the world, to our palate, is candied, bulk, chunk, comb honey. It is good, and will make a sweet chew of wax and a slice of it with bread is good enough for a king, or queen."

Putting aside mere personal taste, and neat and attractive appearance, the question comes up, is it a profitable method of harvesting and marketing an otherwise No. 1 article of honey? Friend Hyde says it is, and that the demand exceeds the supply; and at a good paying price I presume. I contend that it is not, and that it is more profitable to keep our product in two distinct classes, viz., comb honey in sections, and extracted, by itself. Grant, however, that friend Hyde is correct, and that there is a greater demand than supply for such mixed stuff, that of itself is a proof, to me, that if a good honey, put up in first-class style, both comban lextracted, were offered to the same parties, much larger sales could be made and at increased prices.

Some years ago, having sold all my own crop of comb honey. I went to St. Louis to get a supply. At one of the largest commission houses in the city, where I frequently dealt. I inquired if they had any comb honey on hand. "Yes, a very

fine article; come and take a look at it." I did, and found over 100 cases containing 120 pounds to the case. I supposed the one showing me the honey had made a mistake, for I thought the cases contained extracted honey, but I found the 120pound cases filled with as fine comb honev as I ever saw, but in 60-pound cans. I asked the price, and was more than surprised to find it only 6 cents a pound, when I had come prepared to pay from 121/2 to 14 cents for good section honey. I asked them to remove a portion that I might examine it more closely, but it was impossible to do so without breaking and tearing it all to pieces. Of course I did not buy a pound of that honey for I could not use it. I could not sell it to my customers for as much as clear extracted honey. Now, that was A, No. 1, comb honey, originally, and it would have brought 15 cents per pound at wholesale, readily, had it been in sections. I was there to give that much for as much of it as I needed, but I would not give the five cents per bound that they sucsequently offered it to me for, and I believe they sold it later for 412 cents per pound. How much the poor fellow netted on that fine lot of "chunk" honey I leave you to figure out; I only know I was sorry for him, and glad I was not in his place.

This lot of honey came, so I was informed, from Uvalde Co., Texas, but I could not learn from whom. The quality of the honey was such that it greatly influenced me to afterwards move two car loads of my bees to Uvalde Co., Texas. When I came back from moving the first car of bees out there I brought back a case of "chunk" honey, alias, Uvalde sections, alias, broken comb. Soon after my return I met an old customer of over 20 years standing to whom I usually sold about 100 pounds of extracted honey and nearly as much comb each year for his own use. He asked me if I had some good honey, as he was out and needed some. I showed him a can of Uvalde sections of "chunk" honey, and he sampled it, and was pleased with it, and ordered it sent to his place. That was a costly sale for me, for not one dollar's worth of honey has he bought of me since; and that was more than three years ago. Recently I asked him if he did not want more honey, but he remarked that they had quit eating honey at his house; and I feel sure that mixed mess did it.

There is something more or less interesting and exciting in tackling a big beetree on a frosty morning, in the fall, at just the right time to secure the greatest amount of the golden store hidden away in it by the bees; and when the tree falls, and the precious store is laid bare by the quick, skillful strokes of the ax, how delightful it is to pick and nibble the choice morsels and fragments as we remove the great white flakes of comb, and the brown and darker ones, until the tubs and buckets are filled to overflowing; but, friends, do we want to go back to this method of harvesting our sweets? I assure you, that, to me, the honey from wild bee-trees is more attractive and appetizing than this mixture of comb and extracted honey. candied, that some are trying to boom. That the use of "chunk honey" as a pioneer to form the habit of more freely using honey, may have its day and mission is possible, but not probable, or else I greatly mistake the spirit of the times.

BELLEVILLE, Ills., Mar. 1, 1900.



C. P. DADANT is writing, for the American Bee Journal, some very interesting notes of his recent travels in Europe.

H. P. MINER, of Wisconsin, writes that the September Review made him say that two men could chaff 50 colonies in two days, when it ought to have said in two hours.

THE AMERICAN BEH-KEEPER gives, as a frontispiece to its November issue, a most excellent, full-page, portrait of one of Canada's best bee-keepers—Mr. J. B. Hall, of Woodstock.

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THE SANDWICH ISLANDS as a bee-country is something that I know nothing about, but a subscriber would like to have some information on the subject—he thinks that he would rather live there than in Cuba. Can any one tell us anything about the Sandwich Islands from an apicultural standpoint?

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Brace-Combs attached to separators are cut loose with a thin bladed saw, when discovered by F. Greiner, before taking the sections from the super. G. M. Doolittle does this work with an old, long-bladed bread-knife the edge of which has been made rough by running it hurriedly over a coarse rasp. — Imerican Bec-Keeper.

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THE AMERICAN BEE JOURNAL receives a very kind, but well deserved notice from Gleanings. Among other things, Mr. Root fears that Bro. York does not get money enough for his journal when he sells 52 numbers for only \$1.00, This is what I have often thought; and only a first-class business-man, like Bro. York, would have ever kept the American Bee Journal afloat at that price and made it what it is

The Golden System of producing comb honey is very highly praised in the American Bee Journal by Mr. J. S. Hartzell. Last season, his apiary consisted of 53 colonies in the Golden hive, and 23 in 8 and 10-frame Dovetailed hives, managed on the usual plan. The average yield from the Golden hive and system was a trifle over 23 pounds per colony, while that from the Dovetailed hives was only a little more than 12 pounds per colony.

THE FLINT BELGIAN HARE ASSOCIATION has just received 20 hares of the finest strains from California. This company has also ordered a pair of Champion hares direct from England, and expect that they will be here the middle of December. If any of the subscribers of the Review wish to invest in Belgian hares, they can not do better than to correspond with this company.

GLASS for use in shipping cases need not be bought if the bee-keeper lives near a town where there are several hardwares or other places where glass is sold; waste, or broken pieces, of glass can be secured at these places for the asking. Chas. Keoppen of this place, who ships thousands of pounds of comb honey each year, has never bought any glass for his shipping cases. If the front pieces of the cases are grooved instead of being rabbeted, short pieces can be used; but this is seldom necessary except occasionally in long cases like the 21-lb. case.

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CUTS, and the privilege of copying some article from the Review, are sometimes asked for by brother publishers; and the way in which they write sometimes makes me feel that they fear that I don't like to lend my cuts. Nothing of the kind. Anything that appears in the Review, cuts and all, are as free as water—yes, and I'll pay postage on the cuts. I don't need to ask you to give the Review credit for what is copied from its colums, as all of the editors of our bee journals are the souls of honor in this respect.

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THE CHICAGO CONVENTION REPORT of the National Association meeting held last August in that city, as now being published in the American Bee Journal, is the best, and most accurate, and fullest report ever published of any convention held by this body. It shows that it pays to have an efficient stenographer. I believe that Bro. York offers to send the numbers of the American Bee Journal containing this report for only ten cents. Those who are not subscribers to the American Bee Journal, and who are interested in reading exactly all that was said at that convention, should take advantage of this very generous offer.

GRADING honey is a subject that once received a lot of attention and discussion; but little is said about it now in the journals. I remember one objection that was once brought against it was that we could get no more for our fancy grade than we could before the honey was graded, and had to sell the second grade at a lower price. It doesn't always work that way. Chas. Koeppen of this city was selling his honey, without grading, at 15 cts. a pound. He finally graded it, put the fanev at 17 cts., and sold it to the same firm to which he had been selling; and then sold the second grade to this firm for 15 cts. Grading helped the bee-keeper in this instance.

BLACK BROOD is making some of the York State bee-keepers feel rather blue. A Mr. P. W. Stahlman in writing the American Bee Journal says that he beheves that it will not be gotton rid of until bee keepers quit the business, and allow it to do its work of destroying the bees in the woods and those of slipshod bee-keepers. Last season he had charge of over 100 colonies and only a few came through free from disease. Some colonies were treated a second time, yet the disease came again. There is one strange thing about it, and that is that there is occasionally a colony that remains free from the disease, even though surrounded by it; and just how it spreads, has not vet been learned.

BLEACHING comb honey is something that has been written about a little. Perhaps there are some parts of the world where the bees build dark combs, or incorporate some coloring matter in the

combs, but in this locality all of the combs that they build are white. It matters not whether the honey is light or dark, the resulting comb is white. The comb made from buckwheat honey, and filled with buckwheat honey, is just as white as that built from white clover honey and filled with white clover honey. A section of buckwheat honey looks dark when held up to the light, because the honey is dark, not because the comb is dark, for the comb isn't dark. As I have already said, this may be a question of locality, but there is no occasion for bleaching combs in this part of the world.

DOUBLE-DECK SHIPPING CASES.

For some little time single-tier shippingcases have met with the approval of both shippers and dealers. The greatest reason for this preference is that there is no dripping down of the honey from an upper tier of sections, thus soiling the lower sections. Gleanings says that the Colorado bee-keepers are going back to the old, 24-lb., double-tier cases; but instead of using one large glass, two are used, with a strip of wood between. The use of a paper tray between the tiers of sections, as well as one in the bottom of the case, does away with the trouble from dripping. The 24-lb., double-decker makes a case that more nearly approaches the cubical form, making it more easily handled. The case is also a trifle cheaper to make, as not quite so much humber is required.

A BEE AND PEACH LAWSUIT.

Two brothers by the name of Utter, living in York State, have been having a lawsuit over their bees and peaches. The brother who owned the peaches sued the other brother for damages alleged to have been done to his peaches by the bees belonging to his brother. Some ridiculous testimony was given, such as asserting that bees can bore holes through wood, can work wax as hard as stone,

that they will stand on their hind legs and puncture peaches, etc. Notwithstanding that the foolishness of such assertions was shown, the justice rendered a verdict of \$25 for the plaintiff. The case has been appealed to a higher court, and the National Association is helping in the matter. Such a verdict sustained would be a hard and unfair blow to beekeeping. If you are not a member of the National Association, or are in arrears, now is the time to send in your dollar.

SUDDEN DEATH OF S. P. CULLEY.

Mr. S P. Culley, who kept as many bees, perhaps, as any one in Missouri, met with a violent death, Nov. 1, at Venice, Mo., while on his way to Cuba with a car load of bees. Towards morning the conductor awakened him and told him that they were approaching East St. Louis, which was the end of his "run." The conductor went out on top of the caboose to give signals, and Mr. Culley, perhaps only half awake, staggered to the front platform and stumbled off under the wheels and was instantly killed.

Mr. Culley wrote largely for the Progressive, and his writings showed his practical knowledge. As late as October 13, he wrote: "I am writing von a series of articles for the Review, which I hope will prove acceptable, available, and more or less valuable."

Mr. Culley will be missed in bee-keeping circles, but hardest of all will be the loss to the wife and two children left behind.

QUEEN BREEDERS' TROUBLES.

With the best of stock and methods of rearing and shipping, occasionally a queen will turn out a poor affair; and do the best he can, a breeder will sometimes get behind with his orders. It brings a sympathetic smile to my face as I read the letters and explanations that Dr. Miller gives in the Am. Bee Journal regarding troubles that have come to him since he began rearing queens for sale. All expe-

rienced breeders have been "through the mill" time and again; but bless your dear, old heart, doctor, I can remember the time when the receipt of such letters kept me awake nights. An unkind letter still hurts, but not seriously when I know that I have done no wrong. As the years go by I am leaning more and more to the belief that the shipping of queens is often a great injury to them, and the breeders are blamed accordingly. So many times have I sent out a choice queen, one that was a good laver, and all right in every respect, only to receive a bitter letter of complaint regarding her qualities. rule, young queens, those just beginning to lay, bear shipment much better than older queens. The shock to a queen, taken from a full colony in the height of the season, at a time when she is heavy with eggs, and banged across the country in a mail bag, can certainly do her no good. I am coming more and more to the belief that we should buy queens, principally, to improve our stock-to get the seed, so to speak, of something bet-

THE EDITOR IS TO TAKE AN EASTERN TRIP.

By the time that these lines greet the eyes of my readers, I shall probably be at Niagara Falls, Ont., attending the Ontario convention of bee-keepers; a convention that, of all the conventions held this side of the Atlantic, certainly stands next to the National Bee-Keepers' Association of the United States.

From Niagara Falls I expect to go on east into New York, where I shall "talk bees" at a series of bee-keepers' institutes that are to be held under the auspices of the farmers' institutes.

Dec. 12, I shall be at Batavia; Dec. 13 and 14, at Canandaigua; Dec. 15, at Romulus; Dec. 17, at Auburn; and Dec. 18, I shall be at Johnstown. I hope to meet a large number of bee-keepers at these institutes.

I hesitated quite awhile about accepting the offer to speak at these meetings;

not that I did not care to go, or thought it would be no advantage to the Review, but because it would prevent me from catching up and getting the December Review out on time. I finally decided that the constant attendance of the editor of the Review at different bee-conventions, for a period of two weeks, would be of more benefit to its readers than would promptness in getting out one issue. I know that the Review has been behind of late, and I regret it as much as any one can; it is very desirable to get out a magazine on time-not so important as in the case of a newspaper, but very desirable, nevertheless. portant, however, in the case of class journals, like the Review, is it that they furnish their readers important information when they do come. That is the main reason why I am going; because I expect to bring home a big bundle of good things, and spread them out before the readers of the December, and later issues, of the Review.

HOW HONEY SHOULD BE LOADED ON A WAGON.

Gleanings prints a miniature specimen of the caution card that they use on cases of comb honey. Among other things there is a "fist," or hand, and the instructions are to load with the finger pointing to the bow, locomotive or horse. I think that this is correct, but Gleanings says a subscriber thinks that the finger should point to the side of the dray or wagon; giving, as a reason, that the wheels on one side are liable to drop into a rut, giving a jar to the combs; and, therefore, the edges of the combs should point towards Another takes the same the wheels. view as that taken by Gleanings and myself, viz., that when a wagon goes over a sluiceway, or bumps against a bridge that may be above the level of the road, then the jar will be lengthwise of the wagon. When a wheel goes into a rut it does not usually drop in; it goes in gradually. If a wheel does drop in, it goes in alone; that

is, both wheels on the same side do not drop in at once, and the shock to the load. except that portion directly over the wheel, is not very great. Then there is another point, and a much stronger one, and that is, that the sidewise jerk from the drop of a wheel is not very great. The sidewise motion is slight; nearly the whole motion is that of downwards. When a vehicle is in motion, and the roadbed is a little rough, there is almost a constant sidewise motion, but it is not severe; it is a slow motion. The forward or backward jerks, as the wagon passes over obstructions, are much more severe than any sidewise jerk can possibly be. Very little comb honey is damaged in a wagon; and that little comes from careless or fast driving over rough roads without springs. With springs, or careful driving, very little breakage will occur; and, in my opinion, the direction of the combs will have little bearing upon the amount broken; as nearly all of the bumps are downwards.

Broken combs are usually the result of bumps received from the shunting of cars, and from the careless handling of railroad employes, and I think that the caution cards as furnished by the Roots are all right.

THE COLOR OF WAX IS NOT EFFECTED BY THE LENGTH OF TIME IN WHICH

IT IS COOLED.

Bros. York and Hill are having a little set-to in regard to the effect that the slow cooling of wax will have upon its color. Bro. York argues that the secret of a bright yellow color in wax is that of allowing it to cool slowly, while Bro. Hill says that the length of time in which it cools has nothing to do with it. The trouble with Bro. York's argument, as I understand him, is that he is confusing purity, or freedom from dirt, with that of color. That is, he assumes that the dark color results from the presence of dirt. I think that the following sentence will bear me out in this belief. He says:

"Of course it must not be understood that slow cooling changes the color of the wax, only as it gives time for the impurities to settle."

Particles in wax that will settle if the wax is kept in a liquid state do not greatly effect the color of the wax; at least, this has been my experience. have not rendered large quantities of wax, I have used many different methods, and worked a great many batches of refuse comb into wax, and time and again have I seen the brightest, vellowest wax fairly loaded with particles of dirt. kept liquid a long time these particles settle to the bottom, but the color of the wax is not changed one iota. In rendering wax with a steam extractor the wax will run out of the spout into a vessel placed underneath, and, if the wax comes only in a small stream, a crust will form over the wax and against the sides of the vessel, and this crust will be of the brightest yellow, although it is the first to cool -long before the mass of wax underneath is cool. Such little flakes will often be found full of dirt, because they have cooled so quickly, but the color of the way itself is of the brightest.

I buy quite a little wax each season from local bee-keepers who bring it in to exchange it for supplies. Some of this wax is very dark -some gray and some almost black. Time and again have I put these cakes of dark wax into a tall tin can and melted the wax and kept it melted for hours in order that the dirt might settle. A lot of dirt would settle, too, and the wax was cleaner, but the color remained the same. All of the wax that I have ever rendered myself has been of a bright yellow. I have always rendered wax in a tin or galvanized iron vessel, while much of the dark wax that comes to me is, I find upon inquiry, rendered in iron vessels. If this isn't what causes dark wax, then I don't know what it is. Some of the brightest, vellowest wax I have ever made was rendered from old, black, dirty combs; in fact, the yellowest wax can not be obtained from $ne\omega$ combs.

Wax from such combs is of a creamy color — Just what causes the yellow color in wax I am unable to say. Combs when first made are white, and the wax from them is nearly so; after they have become old, and brood has been reared in them, the wax from them is yellow if rightly rendered, and the quick cooling of this yellow wax does not change its color, although it may leave it full of impurities.

AND PARTERS PART

THE NEED OF APICULTURAL EXPERI-

Mr. Arthur C. Miller, in this issue of the Review, calls attention to the need of more systematic work in apicultural experiments. Apicultural experimental work, under the auspices of State or National government, has been of a transient character. J. H. Larrabee worked a year or two at the Michigan Agricultural College; then the bees were taken over to Lapeer, and Mr. R. L. Taylor made experiments for two or three years. Then the bees were taken back to Lansing and put in charge of one of the students, Mr. J. M. Rankin, who has neither the time nor the salary to enable him to do what ought to be done in the experimental line. I believe that Mr. Samuel Cushman, of Rhode I l nd, was employed a few years ago by the State to make some experiments in apiculture and poultry raising. There is an occasional experiment at some of the experiment stations. Prof. Gillette of the Colorado station made an experiment last season with comb foundation. Over in Ontario there has been an occasional apicultural experiment. Yes, and I believe that Prof. Mc-Lain of Illinois made some experiments in getting queens fertilized in confinement. All these things have been spasmodic. Something permanent is what is needed. Bee-keeping experiments ought to be made at each State Experiment station. The difficulty is that bee-keeping is looked upon as rather a small affair, and other interests crowd it out. appointment of Mr. Taylor as an experi-

menter was secured only by a supreme effort on the part of a few bee-keepers. Letters were written and circulars sent out to a large number of bee-keepers, urging them to write to the members of the agricultural boar l. visits were made to the College, and considerable pressure brought to bear upon the board. As soon as Mr. Taylor was appointed, the pressure was removed, and no great interest manifested by bee-keepers, and, as a result, other interests again pushed bee-keeping out of the ring. Needed legislation regarding foul brood was not secured, because of the apathy of bee-keepers. Laws will not be enacted, nor experimenters appointed, simply for the asking. There must be some hard pushing, and some interest manifested. It must be shown that a large number of people need and dcmand these things.

I would suggest that perhaps something might be done in the experimental line by the National Association. Of course, either the membership or the fees would need to be increased. I believe that there are somewhere in the neighborhood of 500 members. If the fees were doubled, raised to \$2.00, it would give \$500 a year to use in experimenting. I think that nearly every member would willingly pay \$1.00 more each year if he knew that it would be wisely expended in making experiments.

A NEW FEATURE IN BEE-KEEPING—
THE MEASURING OF BEES' TONGUES.

When this matter of measuring bees' tongues first began to be discussed it seemed to me frivolous—a sort of fad. I supposed, of course, that their tongues varied in length, but I supposed the variation was very slight—not enough to amount to anything. In order to accomplish anything in the way of lengthening their tongues by selection, I supposed years and years of time must pass; besides this, the matter of mating of queens was so uncertain that it seemed to me

that very little permanent improvement could be expected. Perhaps I was not so very far out of the way in some of my suppositions, but the fact, if it is a fact, has been brought out that bees' tongues vary in length from 13-100 of an inch to 23-100. As I said last month, I am greatly astonished at this difference. I have not measured any bees' tongues myself, but men in whose ability and truthfulness I have great faith have made the measurements, and report these differences.

We all know there is a great difference in different strains of bees as regards the amount of surplus that they will store. As a rule, this difference has been attributed to the greater or less industry of the different strains. Some bees have been called lazy: others industrious. Have we been mistaken in this assumption, or have we been correct, or have we been partly correct? We have all along been supposing that red clover was about the only honey producing plant having such deep tubes that bees could not reach the bottom of them. Is it possible that there are other plants bearing honey producing blossoms with too deep tubes for the bees? If there are no such blossoms in any great abundance, except those furnished by red clover, then red clover must play a very important part where there are bees with long tongues, or else there is an advantage in long tongues with almost any Ernest Root has probably blossoms. done more work in measuring bees' tongues than any one else has done, and he calls the finding of long tongues in bees that are capable of storing great amounts, an "old, old story." That is, length of tongue and great storing ability are always found hand in hand. would be interesting to know if "lazy" bees, so-called, had short tongues. should turn out that bees store honey in proportion to the length of their tongues it would greatly simplify the matter of deciding which are the best bees. not "lose our heads," over this matter, and jump to conclusions; let us keep

cool, and be reasonable, and thoroughly investigate this most interesting point of modern bee culture. A scale graduated to rooths of an inch, and a magnifying glass are not very expensive; I believe our friends, the Roots, can furnish them. Possessed of these, and the skill to use them, a bee-keeper could make some interesting observations. If some colony piled up a big record, measure the tongues of its bees. If some one went far below the average, when there was no apparent reason for it, measure the tongues. don't forget that there are a great many conditions that may effect the amount of surplus honey stored by a colony. What is needed is long continued experiments and observations. I can't help thinking how nice it would be if length of tongue were the only qualification needed by the bees that are to store the most honey. We could go through the apiary in the spring and measure the tongues of the bees of each colony, and then rear our queens from the queen that furnished bees with the longest tongues. If we wished to destroy some queens, and unite their colonies, measure the length of the tongues of the bees, and destroy the queen the bees of which had the short tongues. In judging bees at fairs there has been no way of deciding in regard to the real merits of the bees on exhibition, as there is of deciding in regard to the merits of other live stock; if length of tongue were the greatest point of superiority, the prizes could be awarded accordingly. I fear I am allowing my imagination to run away with my caution; but, honestly, friends, don't let's drop this new idea until we know for sure just how much there is in it; but don't be too ready to swallow everything that is reported, until there has been a great abundance of proof.

Just one thing more: If we could only get control of the fertilization of queens. Is it worth thinking of? I believe it has been given up as a hopeless problem. At present, isolation seems to be the only thing in this line that is practicable.

HOW LITTLE NEGLEGIS EFFECT THE

PROFIT OF THE APIARY.

(Read at the Ontario Convention.)

For want of a nail the shoe was lost; For want of of a shoe the horse was lost; For want of a horse the rider was lost; Being overtaken by the enemy and slain; And all for want of a horseshoe nail.

How well this old ditty illustrates the losses that occur in the apiary from little neglects. For want of a pound of feed in the spring the colony may be lost; and for want of the colony the harvest is lost, as there are no bees to gather it. For want of care in disposing of the cage and accompanying bees when a queen is bought, foul brood may be introduced into the apiary, and the end thereof no one knows.

Most emphatically is bee-keeping a business of details. Of course, there are certain broad principles that must be observed before success can even be hoped for. The apiary must be located where there are honey producing plants, and there must be bees in sufficient quantity to gather the nectar. The bee-keeper must understand his locality; know when to expect the harvest, and have everything in readiness for it. If in a northern climate the bees must be protected in the winter, either by some kind of packing, or by putting them in the cellar. If comb honey is to be produced, some system must be adopted that will keep the working force together instead of having it divided up into two or three colonies. But after a man has mastered all of the basic principles of bee-keeping, yes, after he has become conversant with the details, he may lose a large share of his profits simply from out and out neglect. The bees are in the cellar. He does not go near them. He does not know what the temperature is. It may be too low; and, if so, it might be possible to add to the protection afforded by the walls. Boards might be set up around the walls, held in place by strips of wood tacked to the sides of the house, and the space filled in with sawdust. This little care

might, in some instances, secure the safe wintering of bees that would otherwise perish or come through the winter in poor condition. If the bees are in the cellar under the home of the bee-keeper he might employ artificial heat at those times when it is needed. A large oil stove having a hood over it, connected by means of a pipe with the stove pipe in the room above, will auswer every purpose. A cellar may become infested with rats or mice that will gnaw combs, and do much damage if not gotten rid of. Equal parts of flour, sugar and arsenic placed in dishes in the cellar will make quick work with the rodents. Mice will play sad havoc with colonies left out of doors if the entrances are neglected. The beekeeper should know how his bees are wintering. He should not neglect them. A perfect wintering of the apiary lays the foundation for a successful season.

After the bees are placed upon their summer-stands don't neglect them. soon as the conditions are favorable, look Here and there will be a them over. queenless colony. Here and there will be a weak one. United, such colonies may prove as good as there are in the apiary. Neglected, they will be of little valuethe queenless ones will certainly perish, perhaps become a prey to robbers; thus stirring up bad blood in the apiary at the time of the year when all should be peace and happiness. Some colonies will be found with a great abundance of stores, others on the verge of starvation. lect here means the loss of all colonies that are short of stores.

As the harvest comes on, don't neglect to have the hives, sections, frames; etc., all in readiness. Some of you may be ready to shout "chestnuts." Well, if only those shout who have never been caught, I think none of us will need to cover up our ears. Nothing will quicker change the mood, and disposition, and intention of a colony, cause it to turn its energies into a different channel, than the neglect to furnish it surplus room when it is needed. The disposition to

store honey is laid aside for that of swarming. A colony with the swarming fever will do little work until that fever is abated. If a colony first turns its energies in the direction of storing up surplus, it will often continue on in this way the entire season with no thoughts of And, speaking of swarming, swarming. reminds me, that the neglect to clip off just one little eighth of an inch from her majesty's wing sometimes results in the bee-keeper striking a dejected attitude, as he gazes sorrowfully over the tree tops where he sees d sappearing, as little specks in the sky, the last, few straggling members of the rear guard of a prime swarm that would have stored 50, perhaps 75 pounds, of honey for its owner had he not neglected to clip off that little oneeighth of an inch.

When it comes to the extracting of honey there is one point that I wish to mention, although it may be more a mistake than a case of neglect: it is that of extracting the honey before it is ripe. Of course, it is possible to artificially evaporate thin honey, but with this evaporation goes a portion of the fine Not only this, but the evaporation of honey does not ripen it. The bees in their handling of the nectar invert or change the cane sugar to grape sugar. They change the raw nectar into ripened honey. If we take it away from them before this change is completed, it lacks that much of perfect ripeness. the tang that tickles our palates. Thin, unripe, watery honey ferments, and sours, and bursts tin cans and barrels, and disgusts and disappoints every one who has anything to do with it. Nothing has done more to destroy the market for honey than the placing upon it of unripe honey.

Little neglects in preparing the honey for market are very expensive. The neglect to scrape the propolis from the sections, the neglect to use non-drip cases, the neglect to put the cases into a larger case or crate when small shipments are made, may mean the loss of two or three cents a pound. Sections daubed with

propolis, honey dripping from one case and daubing the one below it, coal dust and cinders rubbed upon the daubed cases, greatly lower the price and retard sales. Before the days of no-drip cases and outside crates I went so far as to wrap a paper around each case before shipment, that the cases might be clean when they reached their destination.

Men who make exhibits at fairs often lose premiums that they might have captured had they not neglected to tastefully label their packages. It is a little thing, but it adds the finishing touch.

Then there are the little things, like: "Where do you keep your smoker and fuel?" The neglect to provide a proper place for them may mean a costly fire. I once kept my smoker and fuel in an old wash-boiler. Once upon a time when I removed the cover, the flames burst out. Suppose the boiler had been a wooden box kept in a building, and the fire had not been discovered while still confined to the box? I now keep my smoker and fuel in a large box, with a hinged cover, out in the yard.

The matter of saving wax ought not to be neglected. It is a good deal like saving paper rags, just about as easy to save the odds and ends as to throw them away. A solar wax extractor is a nice thing for this purpose. Keep it standing in the yard, and when there is a bit of waste comb toss it into the extractor. One year when I did a large job of transferring I threw all of the odds and ends into a barrel, and pounded them down hard with the end of a large stick. Then the matter of rendering was neglected until that barrel two-thirds full of pounded down comb was one mass of webs and wriggling worms.

But why multiply examples? We all know that the profits of an apiary can be entirely wasted or destroyed by little neglects. What is the cause of this neglect? In some cases it is simply a combination of indolence, procrastination, and a sort of belief that things will come out all right of themselves. Then there is the

neglect that comes from having too many irons in the fire. If you have so much business that you can only half attend to it, that something must be neglected, two courses are open; hire some one to help you, or else dispose of part of your busi-There is mose pleasure more profit, in a small business well than in a large managed business that must be neglected. Some men are so constituted that they can not employ help to advantage. They have done all of their work so long that they feel no one else can do it properly. It would put them all in fidgets to see some one else cleaning their sections, or uncapping combs for the extractor. Other men have learned that it is much more profitable for them to oversee and plan the work, leaving the carrying out of the details to competent help. You know yourself, or ought to, so choose the course to which you are adapted, but don't keep on conducting your business in such a manner that you are compelled to neglect it. Be thorough, up-to-date, progressive, and energetic, but don't lose haif your profits as the result of little neglects.

EXTRACTED.

ADVERTISING HONEY.

An Easy, Excellent way of Doing it most Effectually.

So-called breakfast foods, such as rolled oats, wheat foods, grape nuts, and the like, are now very popular. As a rule, they are eaten with a sprinkling of sugar; the general public knowing nothing of the superiority of honey for this purpose. No better scheme has been devised for bringing honey to the notice of these people, than that suggested in Gleanings by Mr. Wm. Hahman. He says:—

While at breakfast this morning it occurred to me that the bee-keepers of this country could do a good thing for the

fraternity, not as bee-keepers but as individuals, by calling the attention of the manufacturers of cereal products such as rolled oats, wheat foods, grape nuts and the like, to the fact that these preparations can be eaten sweetened with honey instead of sugar, and taste better than sweetened with sugar, and requesting these manufacturers to state this as a fact on their directions that appear on the packages of these materials.

Hundreds and possibly thousands of bee-keepers are using some of these preparations; and these requests, coming from a number of parties, might induce the manufacturers to do this. This certainly ought to do some good toward increasing the market for honey. I say this ought to be done by the bee-keepers as individuals and not as bee-keepers, because if this subject is broached by the bee-keepers the manufacturers of these foods will simply consider that Mr. Jones "has an ax to grind."

I enclose a copy of a letter which explains itself. If you consider the matter of sufficient importance, please bring it before the readers of your paper.

WM. HAHMAN.

Altoona, Pa., Oct. 30.

This receives the hearty editorial endorsement of Gleanings, and I wish to voice my approval. The plan is most excellent; and Mr. Hahman has been thoughtful enough to draft a form for a letter. His suggestion that we write as ordinary folks, as consumers, instead of as bee-keepers, is well worth heeding; but, if 1000 of us copy this letter, and send it to the manufacturers of "HO," I fear they would begin to suspect something under the surface. However, there is no necessity for the copying of this letter verbatim simply give the gist of it. If the manufacturers of these foods should receive hundreds, yes, perhaps dozens, of such letters, it might induce them to mention honey in their directions for use. These people are all on the lookout for a good thing, and, if satisfied of the desirability of honey, would be only too glad to bring it to the attention of consumers of their products. If all of the directions on the packages of such foods advocated the use of honey, and told of its superiority, it would be one of the best advertisments that honey has ever received.

SEASONABLE ARTICLES.

Is it Worth While to try and Have Such in Our Bee Journals?

Some mouths ago I urged the desirability of having seasonable articles in our bee journals. It seems to me that the man who is wrestling with 20 swarms a day can not have so much interest in an article on cellar-wintering, as he would in one on the "Control and Management of Swarming." Then, too, the harvesting of the crop, its preparation for market, its sale, and the preparation of the bees for winter, must have largely driven from his mind the article read several months previous. It is possible that there is something to be said on the other side of the question; at least, Mr. F. L. Thompson is stirred up to give us the following in the Progressive.

We have had it hinted of late that articles should be on seasonable subjects. But very few bee-writers make a business of writing so much as to make it pay to write their articles when the subject is freshest, then hold them until the proper time to apply them. They have not the time to sit down and do a lot of work ahead. Again, even from the reader's point of view, it is just as well to have somewhat unseasonable articles, at least from September to April or May; for he, too, especially at this time of year, has the problems of the past season fresh in mind, and can bring a keener interest to their consideration, than when nearly a vear has elapsed since he last thought of them, and by laying the foundation of next year's work now he will have a longer time to digest the subject thoroughly, and make such modifications in his proposed plans from time to time as mature consideration may suggest.

Mr. Thompson is right in saying that the proper time to write is when the subject is freshest, but I can not agree in thinking that such writings will be read with a keener zest because the reader has just passed through somewhat similar experiences, than they will be if he is just about to engage in the kind of work described. If writers do not feel like holding their contributions until they are seasonable, there is nothing to prevent editors from holding them. I would not hold articles until the very moment that the advice they contain is needed, but publish them a month, or two, perhaps, ahead of the season. This ought to give ample time for digestion and mature consideration. This much, however, I am willing to admit, that during the winter there is scarcely any work to be done with the bees, and that there is less call for adhering so closely to seasonability as there is during the working months. Another thing: When some subject has been discussed until it is out of season I would still finish up the discussion while the matter is fresh in the minds of the readers.

I would not push this matter of seasonability to extremes, but it does sometimes seem as though much of the matter in our journals is published just a little too late to be of any use until another year has rolled around—when much of it is forgotten.

GOOD STORES FOR WINTERING BEES.

Honey Dew not Suitable for use in a Northern Climate.

In anorthern chinate, where the bees are confined to their hives for months, the vital point in successful wintering is that of proper food. The long confinement overloads the intestines, and dysenteay is the result. What is needed is a food that will give the greatest amount

of heat and sustenance with the least amount of residue. Pure cane sugar stands at the head. Next comes well ripened honey. Honey de x, with which bees sometimes fill their combs, is very low in the scale of winter-foods for bees. It is true that bees have often been wintered successfully apon honey dew. A warm, open winter, in which the bees could enjoy a cleansing flight, would probably enable bees to come through the winter on almost any kind of stores that were not absolutely unwholesome. Bees wintered in a cellar would certainly stand a better chance of wintering on honey dew than they would in the open air, if the winter was long and severe, as there would be less consumption of stores. Many bee-kespers have reported losses from the attempt to winter bees upon honev dew; but there has often been a lack of conclusiveness from the fact that all of their bees had the same kind of stores—possibly some other factor had an important bearing. The most conclusive evidence that I have seen against the use of honey dew is that given by Mr. Wm. McEvov of Canada. In the last issue of the Canadian Bee Journal he contributes the following:-

In August, 1884, the leaves on the basswoods, elms and hickorys in my locality were covered with honey dew and the bees filled the brood-chambers just as full as they possibly could of the off-colored stuff. I did not like to risk the wintern g of all my bees on honey dew, when I had plenty of sealed clover honey in the top stories, which I had saved to winter them on, but I thought I could safely do some experimenting along this line and go through the winter without any loss. had 55 colonies, and in the fall I took all the combs out of hs brood chambers and placed from a to b combs of sealed clover honey in each hive, and put a division board on each side of these combs. then packed the colonies with forest leaves. I then fitted up 15 colonies with 5 combs of sealed honey dew each, which I had taken from other colonies and after placing division is ards on each side of the comba I packed these colonies with leaves also. I then fixed up the other to colonies with a scaled combs of clover in the center, and a comb of honey dew at

each side, and then the division boards, packing these colonies in leaves the same as I did the others. The 65 that were given the sealed combs of clover honey wintered finely and were very strong with bees in the spring, and gave a large yield of honey in 1885. The 10 that had mixed stores dwindled down very much in the spring, and gave me but very little honey that season. The ten colonies that I tried to winter on nothing but honey dew soiled their hives very badly, and the most of them died before spring, and the balance "petered out" and was gone before the middle of April.

When the clover season is nearing the end I leave five sealed combs in each top story for winter stores, and extract from the other super combs until the season ends, and when the time comes to prepare my bees for winter I have 5 combs of choice stores to put into each brood-chamber for the bees to winter on. If I had left all the bees to winter on honey dew in 1884, when the brood chambers were filled up full with it, I should have lost nearly all my bees. It doesn't pay to try to winter bees on poor stores.

If one does not wish to feed sngar for winter-stores, then the plan of Mr Mc-Evoy, that of saving out combs of well ripened honey for use in the wintering of the bees, is to be recommended. My plan would be that of feeding sngar when the bees either lacked in stores, or the stores in the hive were not suitable for winter. Sugar is cheaper than honey, and has no superior as a winter-food. The work of feeding may be urged as an objection. It is some work, but with proper appliances the work is not great, and the difference in the price of sugar and honey will well repay the labor.

THE WINTERING PROBLEM.

Some Hints on the Care of Bees While in the Cellar.

The wintering of bees in the cellar is becoming more and more a science. It is mostly a question of food and temperature. There are other factors that have some bearing, but they are not so very weighty if these two are right. On the care of bees while in the cellar, Harry Lathrop, of Wisconsin, has some very seasonable hints in the Wisconsin Agriculturist. Among other things, he says:—

In this climate, I prefer to winter in the cellar or special repository. Not because bees cannot be successfully wintered outside, but because, with cellar wintering, we can use a cheaper hive, and one that is handler for summer manipulation; also because there is a saving of stores, as bees do not require as much honey to winter them in the cellar as they do when ontside. In regard to the cellar, the main point is to keep the temperature at about 40 to 45 degrees and the air pure and wholesome; dampness, or even water standing on the floor may do no harm provided other conditions are right. air should be so dry and pure that mould will not gather on hives or walls. I have a dug-out cellar which has a sand bottom, stone sides, plank top, with two feet of dry earth on the plank, and a board roof over the dirt. This cellar is situated in the valley, and during the early spring, for several weeks previous to the time of removing the bees, there are often five or six inches of water in the bottom of the cellar; the result of continuous rains filling the soil of the valley with water. seems to do no harm, as the air remains pare and measurably dry above. is a ventilator, or wooden tube, passing from within about two feet of the cellar bottom up through the roof. This is the best arrangement I know of to use in a dug-out cellar for the purpose of carrying off the bad air

If a cellar is situated under a dwelling or other building it should have a chimnev extending down to the bottom of the cellar and provision made for a stove. I have found that an occasional fire is a good thing during winter. It purifies the air of the room nicely as well as warming it up in cases where the temperature is to low. Some have tried oil stoves. but they are dangerous to the health and comfort of the bees, and are as unfit for a bee cellar as they are for a sleeping-room. Bees are like human beings. They will be quiet while they are comfortable, but deprive them of good air, or place them where they will be chilled or too warm, and they soon become restless and uneasy. This causes them to wear The condition to themselves out. be sought after is to keep them just as quiet and contented as possible. Noise and jars have been mentioned by some as very detrimental, but I think they are nothing as compared to improper conditions of warmth and air. A bee-keeper of quite large experience told me in our convention at Madison last winter of having wintered several colonies of bees in his shop within a few fect of the bench on which he was pounding and working at hive making every day. The bees seemed to get used to the noise and jar, and paid no attention to it. But whenever bees are wintered without the chance of flying freely in and out, I think it very important to keep the room absolutely dark.

To winter bees in the open air in a northern climate requires protection of some kind. There must be a chaff-packed hive, or else the hives must be surrounded with boards, and packing put in next to the hives. As Mr. Lathrop says, hives that are light and readily movable, such hives as are the most desirable for use in the summer, are not desirable hives for wintering bees in the open air—there must be some protection put around them, and putting them in the cellar is the cheapest way in which they can be protected.

Then the saving of stores is quite an item—the saving will soon be enough to pay for a cellar.

The temperature that he recommends is, I believe, about right. If the food is wholesome, and the temperature right, I believe, with Mr. Lathrop, that there is little to fear from dampness. Dampness is equivalent to a lower temperature. Mr. R. L. Taylor once kept several colonies in a cellar surrounded the whole winter with damp cloths. He did this as an experiment. The air was kept saturated with moisture. The bees wintered well.

The caution about using oil stoves is timely. They can be used if there is a pipe connected with the stove to carry off the gases of combustion. I used an oil stove several winters in the cellar to keep up the temperature during cold snaps. I had a tin hood that set over the top of the stove, and from the hood a tin pipe extended up through the floor and connected with the stove pipe in the room above. When thus arranged an oil stove is a most useful adjunct to a cellar that

may need a little artificial heat during a cold spell.

If the food and temperature are what they ought to be I think that noise and jars will do little harm. I think it just as well to avoid them, but I should not worry any because of them. Mr. Heddon one winter disturbed a colony every time that he went into the cellar. He kicked the hive and roused up and disturbed the bees every way that he could every opportunity that presented, yet this colony wintered as well as any that he had.

If the temperature and food are all right, I think that the entrance of light into the cellar will do no harm. If the bees become uneasy toward spring, and the temperature runs high, it is quite likely that many bees would leave their hives and seek the light. When bees are uneasy towards spring, and the cellar door is left open all night, they will be found quiet in the morning, yet the sun may be shining into the cellar and directly upon the hives.

INTRODUCING QUEENS.

How to do it by the use of Tobacco Smoke.

Perhaps some of my readers will think that I am becoming a crank on the use of tobacco smoke in introducing queens. Possibly I am; but if it is really a sure thing somebody ought to become a crank on the subject long enough to turn out some of the losing methods. I believe it was Henry Alley who first used this method; and in a late issue of the American Bee Journal he describes his plan in detail. It is as follows:—

I have read the thousand-and-one methods given in the bee-papers for introducing queens, and none of them, it seems to me, are at all practical. They all require too much work and trouble, and, so far as I know, none of them are reliable.

I never have practiced but one method for introducing either fertile or unfertile queens, and it is always attended with the best success. To be successful in introducing a queen, a colony must be put in shape to realize thoroughly their queenless condition, and this can best be done by letting the bees remain queenless 72 hours. This applies to colonies to which either fertile or unfertile queens are to be introduced. At the end of three days cells will be started, but not capped, and then is just the right time to introduce a queen and make it a success.

When a queen is received, do not put the cage near the colony to which the queen is to be introduced. This is a bad practice and a mistake a good many beekeepers make. When a colony has been queenless three days, place the cage over the frames in such a way that the bees in the hive can have access to the food in the cage, and in the course of a few hours the food will be removed, and everything so quiet the queen walks out and takes command of the colony, and all goes on well.

Now, to make the introduction doubly sure, just blow a quantity of tobacco smoke in at the entrance of the hive-enough smoke so that all the bees will feel it. The lest time to do this, and to introduce a queen, is just before dark.

Now, I can not use 'tobicco' as a good many people can; that is, I can not smoke a cigar nor pipe, and so I was obliged to perfect some arrangement whereby I could funigate the bees with tobacco, so I

made a tin pipe in this way:

The body of the pipe is made of tin "s inch in diameter, and about 5 inches long; then a wood stopper at each end. A hole is made through each stopper, and the one placed in the mouth is shaped to fit the mouth. The stopper at the other end has a small tin tube run through it so that the smoke can be directed to any particular point. The pipe is held between the teeth, and the hands are then Fill the pipe with fine, cheap at liberty tobacco - tobacco such as cheap eigars are made from is strong enough for bees, while the common tobaccoused for chewing and smoking in clay pipes is too strong.

If too much smoke is given, and the bees commence to tumble out at the entrance throw some grass on the alighting-board, but not enough to stop ventilation.

All my queens are reared in full colonies, and are hatched in nursery-cages, and then the queens are introduced to nuclei in hives having four combs and frames 4 x 5 inches. These little colonies build up strong—so strong, in fact, that on hot days I will have nearly 200 of

them with the bees clustered on the outside, and it is a handsome sight to look

upon.

Each of these hives has a hole in the top, or cover, through which the feed is given the bees. When I have 30 or 50 virgin queens to introduce, I place as many cages with queens in them in a box, and then get a plantain leaf for each hive. I then stop the entrance with the leaf, and blow a quantity of tob icco-smoke into the hive through the hole in the top, and quickly shake the queen from the cage into the top of the hive. It does not require over 30 minutes to introduce 50 queens, and, what is the best part of it, I never lost a queen.

Fertile queens can be introduced in the same way; that is, they can be shaken out of the cage just as soon as the colony has been smoked. I gave the first method, as it will better suit most people.

Now, if any reader of this knows of a better and more expeditions way of introducing queen-bees safely, by all means

tell us of it.

Mr. Alley mentions stopping the entrance of a nucleus with a paintain leaf when he smokes the bees with tobacco smoke and releases the queen. He does not tell us why; but in his book he explains that it is because the bees are unable to defend themselves, hence, the entrance should be closed; but, by the time that the leaf wilts and releases the bees, they are able to defend their home.

STORIES IN THE YOUTH'S COMPANION.

In the 52 issues of the year Thi, Youth's Companion publishes more than 250 stories, yet so cirefully are they selected that they prove mexhaustible in variety, unfailing in the power to delight. The stories already in hand for The Companion's foot volume show that this feature of the paper will be as strong as ever.

Among the groups of stories will be one of "Old Settlers" Day "Liles" stories actually told at some of the gatherings of pioneers in the West. There will be four stirring "Tales of our Inland Seas," picturing the adventures of the sailors on the Great Tikes, and there will also be four "Time Titles from the Zoos," told by tame us keepers and trainers of wild beasts. And this is only a beginning. We shall be glad to send Illustrated Announcement of the volume for toot with sample copies of the paper free to any address.

All new subreribers will teceive Thi Companion for the remaining weeks of 1606 free from the time of subscription, and then for a full year, 52 weeks, to January 1, 1609; also The Companions' new Calendar for 1601, suitable as an ornament for the prettiest room in the house.

THE YOUTH'S COMPANION, beston, Mass.

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee. Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs un-even or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, anther and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission-the balance being sent to the shipper Commission is ten per cent : except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars

CHICAGO-We quote as follows: Fancy white, No. 1 amber, 10; fancy dark, 10; No. 1 dark, 8; white, extracted, 7¹/₂ to 8; amber, 7; dark, 6½ to 61, beeswax, 25.

R. A. BURNETT & Co.,

Nov. 19.

163 So. Water St., Chicago, Ill.

CHICAGO - Fancy white comb honey, 16; amber, 13 to 14 dark, 16 to 12 white extracted, from Colorado and Utah, in sixty pound cans, for sale at scents a pound. We are in the market to buy or sell extracted honey in any quanty. Beeswax, 29 cents a pound

S. T. FISH & CO.

Nov. 19.

189 So. Water St., Chicago, Ills.

NEW YORK-Arrivals of comb honey in this market are very light with panes ruling about as heretofore. Just at present there is only a fair demand. We quote as follows. Fancy white comb 15 to \(\nu\). No 1, white, (1) No 2 white, (1) buckwheat, to to 11; buckwheat extracted, 51, to 6, beeswax, fair demand

FRANCIS II LEGGETT & CO.

W. Broadway Franklin & Varick Sts. Nov. 21.

NEW YORK -Good demand for all gralles of comb honey, and ta'r demand for extracted Supply fairly good considering shortage. Bees wax firm. We quote as follows. Fairly white, 161 No. 1 white 11 to 15 laney amber, 171 No. 1 white 12 laney dark, 11, No. 1 dark, 10 white extracted. 85 amber, 7 to 7\frac{1}{2}, dark, 5\frac{1}{2} to 63 beeswax, 28.

HILDRETH & SEGELKEN.

BUFFALO Don't hold honey too long: it has its season; and the public usually changes to something else after December. Market is fairly active as quoted: low grades drag some. We white, 13; fancy dark, 12 to 14; White, 23; fancy dark, 12 to 14; Mo. 1 beeswax, to of 2 to 30

BATTERSON & CO.

Nov. 19, 467 & 469 Scott St., Buffalo, N. Y.

KANSAS CITY - Receipts are light, and demand is firm at prices given. We advise ship-ments. We do not look for much if any decline in market for some time, as it seems that nearly all of the honey has been marketed. We quote as follows. Fancy white, 15 to 15 1/2; No. 1 white, 14 to 15; famey amber, 15 to 14; No. 1 amber, 11 to 17; famey dark a, white extracted, 8 to a; amber, b; to b; dark, a; to b; beeswax, 22 to

W. R. CROMWELL, FRUIT & CIDER CO., Nov. 19. 423 Walnut St., Kausas City, Mo.

If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and supplies, are looking out for their que us, and supplies, and your name on a postal card, will bring you prices of queens, bees, nuclei, bee supplies, and a catalogue giving full particulars, with a full treatise, on how to rear queen; and bee-keeping for profit, and a sample copy or "The Southland Queen," the only bee paper published in the South. All free for the asking.

3-99-tf

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

I have several bundred

QUEEN CAGES

of different styles and sizes, made by C. W. Costellow, and I should be pleased to send samples and prices to any intending to buy cages.

W. Z. HUTCHINSON, Flint, Mich.

THE A. I. ROOT CO.. 10 VINE ST., PHILADELPHIA. PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all 120 West Broadway, New York. | doints. We want to save you freight.

Nov. 20.



The ABC Bee Culture.

1000 Edition.

The only Encyclopedia on Bees,

500 Pages.

Read what the editor of the Revue Eclectique, one of the leading French bee journals has to say of the 1899 edition.

We have just received the latest edition of this manual of apiculture, published by the celebrated house of The A. I. Root Co., and, after having gone over it attentively, we do not fear to affirm that it is the most learned treatise that has ever been published on bees and their culture,

Its title, "A B C of Bee Culture," is too modest; it deserves, rather, to be called an encyclopedia of bee culture. This work is, in fact, a veritable magazine where all questions relative to apicultural science are explained with the greatest thoroughness. The subjects in it are arranged in alphabetical order, with numerous engravings, finely executed, which aid to a proper understanding of the text.

Since the first edition, published in 1877, 67,000 copies have been sold. This unprecedented success indicates sufficiently the value of this work, which, in every respect, is a perfect one. The typography, the illustrations, the paper, the binding, leave nothing to be desired. Let no one believe here that we make an idle boast. The humble praise we have accorded this work is based on its real merit, to which the masters of apicultural science have already rendered the most flattering testimonies.

The well-known editior of Gleanings in Bee Culture, one of the bee-journals the most widely known, is better situated than anybody else to follow the progress of modern apiculture. Not only is Mr. E. R. Root in correspondence with the leading lights in modern apiculture, but he is at the head of the most extensive apicultural establishment that exists. Not only has he gathered together the experiences of the more celebrated bee-keepers during the past 22 years, but, before accepting them and putting them in his book, he has carefully tested them all, and has experimented with all in his own apiary; hence one should look in this book for the most recent conclusions in movable-frame apiculture. It is there, also, that one will find the best systems. Nowhere, it is well known, has the development of apiculture been so great as in North America. The Americans, eminently industrious and practical, have made bee-keeping a special source of revenue. It is, consequently, of great interest to study their methods, the best of which are explained in the A B C of Bee Culture, and which will, we believe, extend the horizon of all beginners who have entered the apicultural field with the object of making it a means of livelihood. We do not know how to urge those of our readers any more strongly, if they understand English, to get this book. hope to see it published in Freuch. We are satisfied that it would have in France, as well as in America, a considerable success. I. P. PRIEUR. Revue Eclectique, Sainte Soline, par Lezay,

Deux Sevres, France, February, 1900.

Now remember that the book has been again carefully rewritten the past sum mer and is fully up to date with much valuable new matter. Price \$1.20 postpaid to any country, or clubbed with Gleanings in Bee Culture, new or renewal, one year, \$1.75. If Gleanings is sent to a foreign address, 48 cents extra for postage.

The A. I. ROOT CO., Medina, Ohio.

JOHN F. STRATTON'S

CELEBRATED

Birmingham Steel Strings

for Violin, Gulfar, Mandolin, Banjo Finest Made. Extra Plated. Warranted not to rust. Send for Catle

JOHN F. STRATTON. Importer, Manufacturer and Wholesale Dealer 811, 813, 815, 817 E. 9th St., N. Y.

Please mention the Review.

-If you are going to-

RUY A RUZZ-SAW.

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

WANTID-HONEY

Would like to hear from parties having honey to offer.

Wanted Extracted Clover and Basswood, such as suitable for bottling trade; also Fancy White Comb-Honey in no-drip shipping cases. I PAY PROMPTLY ON DELIVERY, and refer you to the A I Root Co, or The Brighton German Bank of Cincinnati, Ohio.

C. H. W. WEBER.

2146 Central Ave., Cincinnati, Ohio.

Please mention the Review.

ueens.

W. H. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5 - banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

If You Wish Neat, Artistic

Have it Done at the Review.

Our Fall Specialties

Are your Fall Necessities-

SHIPPING CASES, FIVE GALLON CANS, DANZ CAR-TONS, AND CASH OR TRADE FOR BEESWAN

Send for Catalog.

H. HUNT & SON. M Bell Branch, Mich.

Exhibition Hives.

I shall probably make no more exhibitions of bees and honey at fairs. I have too many other irons in the fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them.

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new. but I would sell them at 15 cents each.

W. Z. Hutchinson, Flint, Mich.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.

YOU-CAN MAKE MONEY RAPIDLY

THE-BELGIAN LV HARE BUSINESS

START RIGHT and

MANAGE RIGHT.

The first step is to seeme the Best Phdigreed Stock. This you can get at a reasonable price from the

Flint Bolgian Hare Association Ltd,

MICH. FLINT

Write for Circular and Price List and other Belgian Hare information

Longest Tongues!

For two years I have been advertising and selling a superior strain of bees. knew that they were really superior, that they stored more honey than any other strain of bees with which I was acquainted, and that others who had tried them had the same report to make; I knew that they were gentle and hardy, as well as industrious, but just why they should store more honey I was unable to decide. It is possible that I do not now know why, but, at last I have got a hint-they have very long tongues. The average length of bees' tongues is 16-100 of an inch, while these bees have tongues 23-100 of an inch in length. Only one other report has been made of bees having tongues of this length. This breeder, who has been furnishing me queens, has been breeding this strain of bees for more than 20 years, always selecting the best to breed from, and, for this reason, this trait, or peculiarity, that of having long tongues, must have become fairly well fixed-much more so than in that of some chance sport. The discovery of this reason for their superiority is the source of considerable satisfaction to me. Heretofore, I could only assert that the bees were superior, that they would store honey, but I could give no reason why, except that this trait had been developed by years of selection and careful breeding; now I can say why, or, at least, give a reasonable reason why.

I wish to repeat what I have already said several times, viz., that it is impossible for a bee-keeper to invest a small sum of money to better advantage than by introducing this strain of bees into his apiary. It will repay him a hundred fold—perhaps a thousand fold. In addition to their known length of tongue, there are also the additional traits of hardiness, and gentleness—something well worth considering.

To those who are thinking of trying this strain of bees, I would say don't wait until next spring before sending in your order. Last spring, when I began sending out queens, there were orders on my books for nearly 200 queens. Orders are already coming in to be filled next spring. They will be filled in rotation, so, if you wish to get a queen next spring, send in your order this fall. The price of a queen is \$1.50; but safe arrival, safe introduction, purity of mating and entire satisfaction are all guaranteed. The queen can be returned any time within two years, and the money refunded, and 50 cents additional sent to pay for the trouble. The Review one year, and a queen, for only \$2.00.

WOODLAND, Hls., Nov. 20, 1900.

Mr. W. Z. Hutchinson-

Can any more of those queens be purchased of you next season? The one I bought of you last June out-stripped everything in this vicinity. As a breeder, she certainly capped the climax of anything that ever came under my observation in the bee line. And her offspring—well, they are simply marvelous as workers. From her colony, in September, I extracted of Ibs. of honey of the finest quality; and, remember, the honey season here was a very poor one. There are a number of apiaries in this vicinity, and I do not know of one that will average to Ibs. per colony. And I want to add right here that the cappings of the honey in this colony were of snowy whiteness; and, to day, as I put this colony in winter quarters, I find the eight combs well filled and capped with that same snowy whiteness that was so conspicuous in the supers. I stand ready to challenge any apiarist in this locality to produce bees the equal of these as honey gatherers. Two of my friends wish to get queens of this strain, and I certainly want more of them if they can be gotten.

Yours respectfully, C. E. AURICK.

W. Z. HUTCHINSON, Flint, Michigan.

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ODDS and ENDS

I am about to move to my new house, which is on a small lot with streets on three sides of it, and I shall be compelled to give up the keeping of bees. I have a few odds and ends that I would like to dispose of. I have a two basket, second-hand, Ferris wax extractor that cost \$5,00 when new. I will sell it for \$5.50. I have a new Ferris, single basket wax extractor, list price \$5,50, would self for \$2.50. I have a new, Doolittle, solar wax extractor, list price \$5,50, would sell it for \$5.50. I have ten dozen, t-pound, sonare, flitt glass, Muth jars with cores worth so cents a dozen, new, would sell at ocents a dozen. There are too; dozen of the same kind of jars, only they hold two pounds instead of our and cost (2 cents a dozen when new. I would sell them at \$5 cents a dozen.

W. Z. HUTCHINSON,
FLINT - - - Mich.

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This is the original one - piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$5.90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK,

Watertown, Wisconsin.

Listen! Take my advice and buy your bee supplies of August Weiss; he has



tons and tons of the very finest

MOITAGNUOT

ever made; and he sells it at prices that dely competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of Sections—poli hed on both sides. Satisfaction guaranteed on a full line of Supplies—Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

it ch :

REWIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Some Pictures.

For some seven or eight v ars I have been working with a camera. I have read books and journals on thotography, and studied the subject something as we bee-keepers study beekeeping. I have learned that there is a difference between a view and a PICTURE. The latter mus not only please the eye, must appeal to our love of the beautiful and the picturesqu, but it minst al o Tell US SOMETHING. It must awaken thought; n'ust suggest more than is shown. Then there must be technical perfection. We must jot have our attention distracted, or our pleasure marred, by bungling workmanship. Not once in a thousand times do we get a "chance picture." A real pictur, is studied over, and thought out, and planned, and exists in the mind of the artist long before he puts hand to the camera; which is simply the tool that aids him in pu ting his ideas into tangib e, visible form. The more sk llful the handling of the camera, the more perfect the knowledge regarding the processes of developing, printing, toning, etc., the more clearly and beautifully can the artist picture his ideas.

Of the hundreds of views that 1 have taken, perhaps a few might be fairly entitled to the honor of being called pictures. There are four, in pa ticular, at which 1 never tire of gazing and I often wish that my friend, the readers of the Review, might enjoy them with me. I have thought about this so much, how subscribers might delight in having upon their walls pictures made by their editor's own hand, that 1 have decided to describe these pictures, and allow my friends the opportunity of securing them.

THE OLD MILL DAM.

At the bottom of a deep gorge, its banks lined with thrifty lindens, drooping elms and dark green pines, somebody, years ago, built a high dam, with a mill close beside it, just above where a brook went tumbling down over a series of rocky ledges. The water comes down over the dam in thin sheets here and there, so thin that its liquid c earness can be seen, almost felt, and then, in filmy whiteness, goes dashing from one ledge of rocks to another into a limpid pool at their feet. In some places the black rocks can be seen through the delicate, white, misty veils of water that hang in front of them. The dark holes up in under the big timbers forming the flume that carries the water to the mill are such as might awaken strange, weird fancies in an imaginative mind. In sheltered nooks about the old mill with its broken windows, robins build their nests, and, at evening, warble their vespers from the withered limbs of a tall, dead pine standing near. Over all is the golden sunshine, throwing into bell relief all things upon which it falls, making beautiful contrasts with objects left in the shade, and filling the very ATR with its warmth and brightness.

IN THE SWEET SPRINGTIME.

This is a scene in an old apple orchard, taken at that season of the year when the whole country is one blush of bloom, filling the air with a fragrant sweetness; when fleecy clouds float lazily overgreen meadows, and, from topmost boughs, happy birds are cheering their mates sitting patiently upon nests hidden away among the branches be ow. Under foot the new grass is yet soft and tender, and the wide-spreading branches of the apple trees are almost hidden by the masses of pink and white promises of future fruitfulness. Almost instinctively, in looking at this picture, the bee-keeper listens for the hum of the bees.

WHERE THE SUNSHINE LOVES TO LINGER.

In Michigan, fifty miles north of Detroit, lies a farming country delightfully picturesque. Hills and valleys, cultivated fields and green meadows, clumps of evergreens and scrub-oaks, little gems of lakes and babbling brooks, big red barns and comfortable farm-houses, all combine in making a picture of comfort and content upon which the sunshine loves to linger. Last July I packed my camera, took the train for Davisburg, Oakland County, and was fortunate enough to fine a characteristic view just as the sun, very reluctantly, was giving up the lan scape to the coming twilight. In the foreground is a hay field, and the long shadows cast by the hay cocks and clumps of bushes show most conclusively that the sunshine clings as long as possible to the lovely scene with its brook, and lake, and hills, and farm-buildings, and beautiful, dreamy, white clouds overhead

FAREWELL SUMMER.

Corn in the shock, big yellow pumpkins on the ground, goldenrod blooming in the fence corners, brown leaves falling from the maples, a mellowness in the sunshine that gilds the ripened corn, all proclaim that the reign of summer is ended.

Into these pictures I have put my whole heart; spending days in selecting the scenes and the best points of view; in deciding upon the best time of day, and even the KIND of a day, in which to make the different exposures.

I would go more into detail in describing these pictures, but to every customer I will allow the privilege of returning pictures for any cause whatsoever. It would be no pleasure to me to have a friend keep a picture that he did not care for. With me this is not wholly a matter of dollars and cents—pride, and sentiment, and friendship will enter largely into the transaction.

The pictures are 8 x to inches in size, printed upon Aristo Platino paper, which has a matt surface and is absolutely fadeless, mounted upon heavy, to x 12, earbon-black mounts, and sent by mail thoroughly protected from injury.

They are suitable to be framed and hung in the home of any bee-keeper.

PRICES.

The price of a single picture will be 75 cents; or I will send the Review one year and one picture for only \$1.50.

Two pictures will be sent for only \$1.25; or 1 will send the Review one year and two pictures for only \$2.00.

Three pictures will be sent for only \$1.75; or 1 will send the Review one year and three pictures for only \$2.50.

The whole four pictures will be sent for only \$2.25; or 1 will send the Review one year and the four pictures for only \$3.00.

W. Z. HUTCHINSON, FLINT, MICHGAN.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We al-

so carry a complete line of other supplies.

Catalog free. R. H. SCHMIDT & CO.,
9-99-tf. Sheboygan, Wis

Please

MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen bredders of the U.S., and have testimonials from satisfied customers in the U.S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 1st, 2; so each After June 1s., it sted queens, either strain, \$1.00 each; unitested, "5 ets each one frame nucleus with queen, \$1.50, (wo frame, \$2, \text{three-frame, \$3.25.}

1-00-tf

J. W. MINER, Ronda, N. C.

Per em

Please no et an the Reciew

FOR SALE,

Extracted Honey

From Utali and Colorado. White in color. Sixty-pound cans, (2 cans in case) 8 cents per pound. If less than 5 cases we charge 25 cents cartage to depot. Guaranteed pure.

S. T. FISH & CO., 180 South Water St. (Established 24 years.) Chicago, Ills.

FOR SALE.

Apiary of 40 colonies of Golden Italians, in to-frame Doolatle hives, together with

intures. Exerything up to date. Also beautiful buildings, consisting of s-room, 2-story dwelling, barn and other outbuildings. Peach and pear trees, grapes, etc., in bearing. No disease. Health el mate. Mild winters. No better locality to be had than this to those who desire to embatk in the bee business. Average yield of surplus honey, 50 pounds to the colony. Photographs sent to those interested.

J. W. MINER, Ronda, N. C.

Plea - mer - n the Review



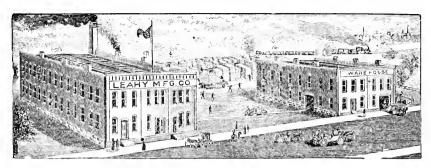
BEE-HIVES AND HONEY-BOXES,

in ear lots—wholesale or retail. Now is the time to get prices. We are the people who manufacture strictly first-class goods and sell them at prices that defy competition. Write us today.



Interstate Box & Manufacturing Co., Hudson, Wis.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon–Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bze-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progres-

sive Bee-Keeper. Address

LEAHY Mfg. 60., East St. Louis, Ills. Omaha, Nebraska.

Winter

Losses are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from improper protection; from a cold, wet, or possibly, a poorly ventilated cellar, etc., etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points consult "ADVANCED BEE CULTURE." Five of its thirtytwo chapters treat as many different phases of the wintering problems.

Price of the book; 50 ets.; the REVIEW one year and the book for \$1.25. Stamps taken, either U.S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

We have a Large Stock, and can fill Orders Promptly.

Send us your orders for hives, extractors, or anything that you want in the bee-keeping line. We make only the best. Our Falcon Sections and Weed Process Foundation are ahead of anything, and cost no more than other makes.

New catalogue and a copy of The American Bee-Keeper free.

W. T. Falconer Mfg. Go.,

JAMESTOWN, N. V.

16.5 W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalogue prices.

Page & Lyon,

Mf'g. Co.

New London, Wis.

Nearness to pine and basswood forests the possession of a saw-mill and factory fully equipped with the best of machinery, and years of experience, all combine to enable this firm to furnish the best goods at lowest prices. Send for circular, and see the prices on a full line of supplies.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, haying a very thin base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the way to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen wird. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

W.O. Victor,

QUEEN SPECIALIST

Wharton, Texas.

I have as good stock as there is in the United States, so says the A. I. Besides having selected choice outerns from p.v. on stock from time to time during the entire seisen, I have bought select queens from a number of breede and high repute. In addition to these I have a dozen imported queens due to arrive direct from Italy any day. To this add an extra select tested daughter of the A. I. Root Co's \$200 red clover queen, the bees of which have a reach of 21-100 of an inch, and ; select queens of Moore's long tongue strain, and I feel that my stock is at the top of the present development of superiority. Untested queens, \$1.00; tested queens, \$1.50° select tested queens, \$2,50 to \$5.00. Root's goods at Root's prices, plus the car load freight.

> the best smoker leverused Please send me one brass smoke r. F. Bingham I have one already. It is

Enclosed find \$1.75

Henry Schmidt.

Hutto, Tex., April 10, 1900

Wm Bamber,

Mt. Pleasant, Mich., has his own saw-mill, and a factory fully equiped with the latest machinery, located right in a pine and basswood region, and can furnish hives, sections, frames, separators, shipping cases, etc., at the lowest possible prices. Making his own foundation enables him to sell very close. Send for samples and prices before buying, and see how you may save money, time and freight. Bee-keepers' supplies of all kinds kept in stock. 12-99-It

Dittmer's Foundation

At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working wax into foundation for cash, a specialty. Write for samples and prices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for catalog. Breswax wanted.

GUS DITTMER,

Augusta, Wisconsin.

Violin for Sale.

I am advertising for the well-known manu-I am advertising for the well-known manufacturers of musical instruments, Jno. F. Stratton & Son, of New York, and taking my pay in musical merchandise. I have now on hand a fine violin outfit consisting of violin, bow and case. The violin is a "Stradinarus." Red, French finish, high polish, and real ebony trimmings, price \$14.00. The bow is of the finish above from final, inlaid (pearl est snakewood, ebony frog, lined, inlaid (pearl lined dot) pearl lined slide, German silver shield, ebony scrow-nend, German silver feedles, *:1 pearl not in the saw price \$2.50. The case is send with engretting. varnished, fit with pockets, and furnished with bra and handles and lock, price \$350. This makes the entire outfit worth an even \$2000. It is ex-actly the same kind of an outfit that my daughter has been using the past year with the best of satisfaction to herself and teachers. Her violin has a more powerful, rich tone than some in-surnments here that cost several times as much. I wish to sell this on fit, and would accept one-I wish to self this on it, and would accept one-half nice, white extracted honey in payment, the balance cash. It will be sent on a five days' trial, and if not entirely satisfactory can be re turned and the purchase money will be refunded.

W. Z. HUTCHINSON, Flint, Mich.

G. M. LONG, Cedar Mines, lowa, manufacturer of and dealer in Apiarian Supplies. Send for circular. 1-96-6

Please mention the Review

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking or buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saving what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Bee keepers should send for our

CATALOG.

We furnish a full line of supplies at regular prices. Our specialty is Cook's Complete hive.

J. H. M. COOK, 62 Cortland St., N. Y. City

Make Your Own Hives.

Bee - Keepers

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and boxes
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Send for Cav
W. F. & JRO. BAN.
384 Ruby St.,
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10074 Will save money by using our Foot Powmaking their hives, sections

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Great Clubbing Offers.

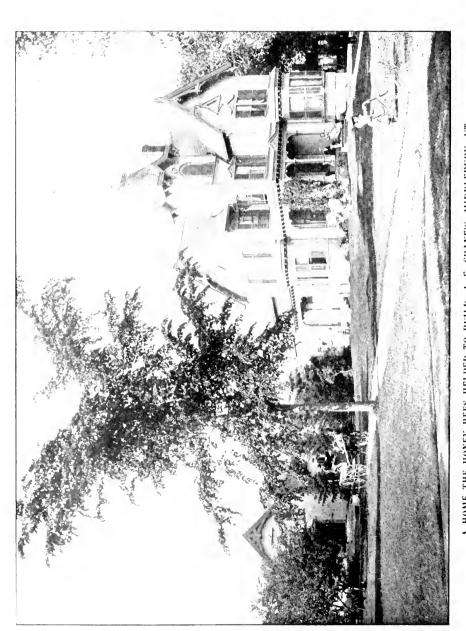
My friends, how many of you are reading some of the many, most excellent magazines of the day? If you are reading none, you are missing a great treat. Perhaps you regard them as luxuries. Possibly they are in some instances. They certainly help to fill out our lives and to give us broader views. They are like windows that allow us to look out over the wide world. This life is not wholly one of dollars and cents—at least it ought not to be. Enjoyment, pure and simple, enjoyed just for the sake of enjoyment, is desirable and beneficial. To many there are few things that are more enjoyable than the bright pages of a really good magazine. To those who wish to give the magazines a trial, and to those who are already reading them, I can offer some of the lowest clubbing offers that have ever been made. Here is what I have to offer:

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Success, Current Literature, McClures, Home Magazine, and the Review for only . . . . $4.00
Success, Current Literature, McClures, Cosmopolitan, and the Review for only .... 4.00
Success Current Literature, McClures, Pearson's, and the Review for only
Success, Current Literature, Cosmopolitan, Home Magazine, and the Review for only 3,75
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Success, Current Literrture, McClures, and the Review for only
Success, Current Literature, Home Magazine, and the Review for only ....... 3.50
Success, Current Literature, Cosmopolitan or Pearson's, and the Review for only
      (Review of Reviews, NEW SUBSCRIPTIONS, will be sent in place of Current
      Literature in any of the above combinations if desired.)
Success, McClure's, Home Magazine, and the Review for only
Success, McClure's Cosmopolitan, and the Review for only ... ..
Success, McClure's, Pearson's, and the Leview for only ......
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success and Pearson's, and the Review for only .....
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W. Z. HUTCHINSON, Flint, Mich.





A HOME THE HONEY BEES HELPED TO BUILD-J. E. CRANE'S, MIDDLEBURY, VT.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers \$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL XII, FLINT MICHIGAN, DECEMBER 10 1200 NO.12.

OW THE BEES HELPED TO BUILD A BEAUTIFUL HOME. BY J. E. CRANE.

I had almost forgotten that I had promised to write you something about



the home the honey bees had helped to build, and what shall I say? The picture shows the outside of the home better than I can describe it. Of the inside I will only say that it is as convenient and pleas-

ant as it is pleasing from the outside.

It will be observed that the barn has a wing running out to the right. This is my honey house, where I store my honey and fixtures and do my work. I like this much better than where the honey house is in a separate building; as I can load my wagon with clamps or hives on the barn floor; yes, and hitch on my horse already to start, before opening the door. Again, I can bring in a load of honey from out-yards, and at once drive in and close the doors, without any interference

from robber bees. Or, if it should be raining, it is a great convenience to be under shelter while unloading. Some years, when I have a large crop, I have found the barn floor, after sweeping and cleaning, a most excellent place to pack honey; as my work room would be too clogged to give me room.

But, how did the bees help to build the home I hear some one ask? Well, it was very much this way: When young, I was very much of an invalid. The best medical advice was that I should live on a far n; live in the open air. But I could not do the hard, heavy work of the farm, and how was I to make a living without being able to do the work, for I had not the capital to hire it done. Either some branch of farming must be followed that did not require hard work, or some means must be used to make enough to pay for extra help. No one in our parts had made a business of bee-keeping in those days, some thirty-five or forty years ago, but some of my neighbors kept bees, and in good years sold some honey. I secured Quinby's and Langstroth's works on bees, and studied the subject very carefully. During the civil war there were no journals devoted to bee-keeping. One or two that were started just before were discontinued. The bee-keeping world seemed a great blank, compared with to day. But I was led to believe that if I could not make a living at bee-keeping, I could at least sell enough honey to hire the necessary help to run a farm; so I began in a small way, and did not get a pound of surplus the first season; which was a very poor one. The next year was a good one and my colonies averaged 100 lbs. And then I increased gradually till I had six or seven hundred that I could call my own.

Of course, I used a frame hive from the first, and kept Italian bees. There seemed to be more difference between Italian and black bees in those days than in more recent years. But I find, by getting new strains of Italian blood, that their old-time vigor seems to be restored.

The price of honey was high in those days, averaging me 30 cents per pound above cost of selling.

But, if there is one thing above another that I did, besides carefully studying the bees and everything connected with them, that led to my success, it was that I increased my stock slowly; and, as I could manage them If the season was poor, I got what surplus honey I could, and let the increase go till a more favorable year; not attempting to increase by artificial means. If the year was good, I would get my crop of honey and what increase I could. In this way I made them earn me something almost every year. to me that I have known more failures in bee-keeping to come from rapid increase than from any other cause; and I don't know but more than from all other causes put together.

Another thing I ought, perhaps, to mention, is that I have stuck to my bees, through winter and summer, year after year, and now, after many years, notwithstanding the low price of honey, I have reason to believe that they will pay as well in any fairly good section as any other branch of rural industry; and now, after working with bees for 35 years, I am more than ever interested in them. t doesn't pay to go into bees, and when

there comes a poor year, sell out, or let them die, and go crazy over something else. Many sections of our country are undoubtedly unfit for profitable bee-keeping, as much so as are parts unfit for wheat growing, or the raising of fruit, and there is nothing to be gained by trying to make ourselves believe we can succeed with bees everywhere. Such sections can be easily determined by the flora, and the experience of those who have kept bees for some years in such localities.

MIDDLEBURY, Vt., Nov. 26, 1900.



SING TEN-FRAME HIVES TO ADVANTAGE IN COMB HONEY PRODUCTION. BY C. A. HATCH.

There are some bee-keepers who can see no reason why a hive for comb honey



should be any larger, smaller, or different, than for extracted honey, aside from fitting a given kind of super or section. We have heard it so often quoted that "eight frames for comb, and ten for ex-

tracted" are just right, that we have accepted it without question.

I, for one, am inclined to be a doubter. I never saw an argument for one that would not apply with equal force for the other; if the one that bees store surplus over brood more readily than over either combs of honey or dummies be excepted; and this applies in favor of the larger hive; for there you can get more brood surface.

Some experiments that I have been making during the last two or three years

have made me more and more of a doubter. This last season, which was a poor one, I got 40 pounds of surplus from each of five colonies run for comb, while the average of the rest of the apiary was only 35 pounds of extracted. The comb houev colonies were of the best, and if the extracted average hal been taken from only the best run for extracted, the show ing, no doubt, would be much more favorable to the extracted side. But we might double the extracted and call it 70 lbs., and then the comb honey colonies made a good showing for a poor year when many colonies run for comb gave absolutery no finished surplus. But to get this average of 40 lbs. I had to feed back about 60 lbs. of unfinished sections.

The season was short, and practically all of the surplus came from basswood. Results might have been different if we had had a fall flow.

The colonies, up to the time of putting on supers, received just the same treatment as the rest of the apiary; that is, every inducement was given the bees to rear brood; all natural heat of the bees was preserved by a quilt and close cover; plenty of stores were always in the hive; and about once in 8 days the brood was spreal as much as the requirements of each individual case seemed to require. At the time supers were required I adopted what, to me, at least, was a radical innovation. Instead of leaving the brood in the hive as nature had arranged it, the eggs and unsealed larvæ in the middle of the arrangement were entirely reversed, and the eggs and unsealed brood put at the extreme outside of the hive.

I reasoned thus: these eggs and young brood cannot get out of these combs inside of 16 to 20 days, and, therefore, the bees can put no honey in them, and the ones in the middle of the hive they will be loth to fill with honey because the queen wants them for egg-laying; so they will, of necessity, put all of the honey above; and the sequel proved the correctness of the position.

Swarms were hived back on the old stand on starters, and the super put above, with a queen excluder between, and all the bees were shaken from the old combs into the swarm. All of the comb honey hives swarmed, and all filled their hive with nice combs, except one, and that did almost nothing in the super after swarming. The queen seemed to be a poor one, and by the time she was superseded the flow was over.

The sections used were the Danzenbaker, with fence separators, and no bee-way. This was my first trial of the no-bee-way section, and, if I were to base an opinion on this year, I should condemn them. They have not come up to the old style Danz., with me. But the old style were tried in a good year, and the new in a poor one, so judgment is reserved.

Another result: I noticed in my experiment of reversing the brood, that the sections at the outside of the super were, in some instance, finished *first*; was it the position of the young brood that caused it, or was it just a "happenstance?"

RICHLAND CENTER, Wis., Nov. 26, 1900.



FROM ANNOYING NEAR NEIGHBORS. BY JESSE M. DONALDSON.

There are a few slight difficulties connected with keeping bees in a village, that do not trouble the man that has his apiary located in a thinly settled district. The village bee-keeper must manage his bees, in such a way that they will not become a nuisance; and he must also keep the good will of his neighbors. Experience has taught me that these difficulties are easily overcome; providing we are careful in our management and the selection of our bees.

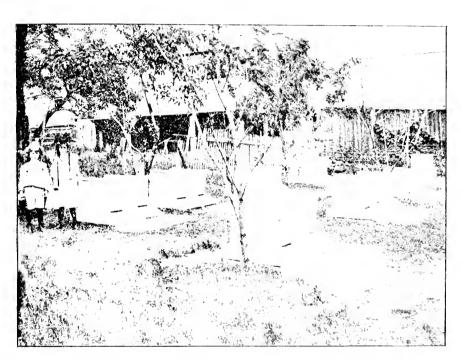
My apiary is centrally located in a town of 5,000 inhabitants, and not over 50 yards from three streets. When I located here

many of my neighbors freely expressed their opinion that my bees would be a nuisance; but I have been here three years, and in that time I know of only one person being stung. One fourth of July morning, a few rowdies wanted the fence back of the apiary, to make a bonfire; and while they was tearing it down they struck one of the hives—then there was trouble.

I never leave any sweets axposed to start robbing.

If feeding must be done, as in queenrearing, I wait till evening after the bees have stopped flying.

Keeping the good will of my neighbors is easily done. When taking off honey, if any sections are slightly damaged, I give some of them to my near neighbors. The little honey given out in this way



APIARY OF JESSE M. DONALDSON, NORTH BROOKFIELD, MASS.

How do I manage my bees? There is nothing new or original in my management. I have adopted a set of rules, and follow them.

If a colony shows a disposition to be cross, the queen of that colony has her head pinched off; and is replaced by a queen of a more peacable strain.

When there is no honey coming in, I avoid opening hives, except when it is absolutely necessary; then it is done as quickly as possible.

will often make a new customer. I once called at a house and tried to sell some honey. The man of the house told me that they did not like honey. Last year this man came in to my shop, when I was cleaning sections. When he was going out, I handed him a section which he did not refuse, and it was not very long before he came in to buy some; and this year he has been one of my best customers.

NORTH BROOKFIELD, Mass., Aug. 3, 1900.

ORETELLING THE MONEY FLOW OF THE COMING SEASON. BY IRA BARBER.

Allow me to tell the readers of the Review what has been my guide in deciding the prospects for a crop of clover



honey, the winter before it comes. Up here is not now much to keep the ground from treezing to a lepth of two or three feet, we can calculate—that there will be no use for sections:

an I that if we keep all our colonies alive, it will take some sugar to do it.

It does not make any difference whether the soil is wet or dry when frozen, nor whether there is a great amount of clover in the fields, there will be only a little honey to be found in the clover after such a winter. Why it is I do not know; unless it is that, deep in the soil, the little rootlets tail to find the proper nourishment for feeding the plant to keep it in condition to secrete the nectar, as it would under other conditions.

When we have snow come on with no frost in the ground, come deep enough to keep the frost out, and stay on until spring, we can look for a good crop of honey from clover; and it makes little difference what the weather is, if it is so the bees can fly. I have seen great crops of clover honey gathered in seasons when it was so wet that the bees were driven in several times a day, and the ground was perhaps saturated with water through the entire clover season. Then, again, I have seen seasons that were dry all through the clover scison, yet the honey came just the same; when it dried up in one place there appeared to be clover in some locality on mast soil that kept, the bees supplied all through the season.

The past two seasons we have had, to all appearances, the nicest kind of weather, all through the clover season, such as warm, still days, thunder showers near at hand, occasionally one right with us, and the fields a sea of Alsike clover blossoms, yet the honey did not come. But the pollen came in any quantity. Each preceding winter of these two seasons but little snow fell here, and the ground was frozen to a depth of two feet, or more.

I first noticed this cause of failure of our honey crop early in the seventies, and from that time to this I have not seen a good crop of honey in any season when the ground was frozen deep the previous winter; nor have I seen a season when we had no frost in the ground that we did not get a big crop of honey.

Some may say that freezing has nothing to do with it, for the reason that there are plenty of localities where it never freezes, and yet clover fails to secrete honey just the same. There may be other causes, such as a lack of moisture at the extremities of the little fibers of roots deep down in the soil, which stops the flow of nectar through the plant the same as it does with the sap of the maple tree.

Vears ago, for a period of 30 years, I made large quantities of maple sugar every spring, and occasionally there would come a dry summer and a dry fall, with so little rain that the winter would set in with the ground under the trees as dry as ashes, and it would remain so all winter, and in such seasons we might about as well look for sap to come from a basswood or hemlock as to expect it to flow from a maple tree; and if there did not come heavy rains to saturate the ground, we got no sap, and our sugar season was a failure.

Now then, as no condition of the weather, such as thawing and freezing, can effect the maple, and cause sap to flow when it stands in a bed of dry soil, is it not reasonable to conclude that the cold soil beneath the plants is why no nectar flows into the clover blossoms? Surely, the

nectar comes through the plant up into the flower, and no kind of fine, atmospheric conditions of the weather can do so after one of deep frost in the soil.

To those who depend upon clover as their main source for a crop of honey, I would say, look into this, and see if it has not been the same in your own locality; and when you have learned for yourself that the conditions that I have described are not favorable for a good crop of honey, you will feel like going a little slow in getting a large stock of supplies, until you see some prospects of needing them.

Some may like to know how I learned that maple trees would give but little or no sap when the soil was dry beneath them.

In my sugar works were two ravines where the soil was always moist, and in these ravines the sap would run freely in the dry seasons, while on the ridges there would be little to gather. In a wet season the trees on the ridges would furnish sap just as freely, or better, than those in the ravine.

I have seen clover secreting honey abundantly along the fence corners where the snow had drifted on and kept the frost out. I could see the bees, as they alighted on the clover heads, put their tongues into the petals and stay there as though there was something to be had, while a few rods to one side, where the clover was just as plentiful, they would appear to do nothing except to alight on the clover, run over the blossom, and then sing away to the next head. Now, what made or caused the difference in the secretion of honey in clover heads, only a few feet apart, on the same kind of soil, and in the same atmosphere, if it were not the cold beneath the plants? I have never noticed any bad effect from four or five inches of frost, if it did not pull and kill the clover; it is the deep freezing that stops the flow.

DEKALB JUNCTION, N. Y., Dec. 13, 1900,

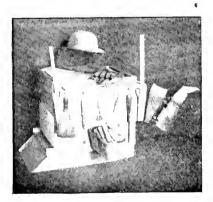
HE BEGININNG OF AN APIARY. A HANDY TOOL-BOX. BY W. W. LATHROP.

My Apiary in 1897 consisted of one hive of black bees, and this photograph shows how it looked early



one morning after I had transfered them from an old boxhive. I now have ten colonies of Italians in Danz. hives. Whenever I open a hive I have my tool-box on the side, as shown in the accompanying photograph. I never lose my tools, for when not in use each one is hung in its place. The two

sticks in the pockets at the ends belong between the brood-frames and the end of the hive. The box will hold two frames easily, so I always have plenty of room inside the hive to examine combs with-



LATHROP'S TOOL-BOX ATTACHED TO

THE SIDE OF A HIVE.

out being crowded. I use pieces of old barrel staves for smoker fuel, and my little wood basket always goes around with me and has its place with the other tools.

BRIDGEPORT, Conn., June. 18, 1900.

ON SWARMING HIVES, AND WHAT CAN BE DONE WITH THEM. IMPROVEMENTS IN STOCK. BY L. A. ASPIN-

WALL.

Friend Hutchinson—Nearly a year has elapsed since writing for the Re-



view. My reticence is wholly due to an unprecedented amount of inventive work for the Aspinwall company.

Considering the absence of any contributions during this long period, perhaps a summary of my

bee-keeping for a year may be interesting.

Knowing, as you do, my method of wintering bees upon their summer stands, and without the loss of a single colony since its adoption, which has been seven years, I will simply say that their condition each spring has been beyond comparison.

I begin the season of 1900 with 48 colonies, two of which were queenless, With no i-swirming leves (of which I shall presently speak all queenless colonies in the spring are left until the latter part of May, at which time I insert dnmmy combs between the natural combs of my strongest colonies to prevent the tendency of swarming. Many of them will have a comb of brood in excess of the room after alternating them with dummies. These are used to build up all greenless colonies, which become fairly strong in two or three weeks. is my practice to furnish them with a comb containing eggs and larvae from selected stock after destroying the first lot of quien cells. By this plan I secure for them good queeus, although not egual to those reared under the swarming impalse or saperse lure. However, for me, this is the most practical method of treating colonies which have become queenless during winter.

In speaking of non-swarming hives you will doubtless wonder as to their success. In my writings for the Review I once suid "the unexpected usually happens" with successful inventions. That is, we get more than was first anticipated. you may ask, what can it be more than the prevention of swarming? The perfection of the principle is such, in its present construction, that in the event of superse lure, no swarms will be forthcoming. Furthermore, with no dummies introduced, and the colony allowed to swirm, a removal of the queen cells, and introduction of the dummies previous to returning the swarm, will completely overcome the impulse. It is interesting to note that many of the workers will mark the location, as in the instance of a newly hived swarm, and work with renewed energy.

A third point of excellence is, that the queen is never crowded into the sections. No queen excluding zinc is used in my apiary.

There is one point more which I will emphasize as being decidely unexpected; viz., the improvement of bees through non-swarming hives. This subject I treated in my article for the Review last February, but without any knowledge of what the non-swarmer has apparently been doing for me. By reference to the Review, of July 1897, you will note an article, headed "The will of the workers." I refer to this simply to add that the development of queeus is also by the will of the workers. Oncens reared under the swarming impulse are most assuredly such; while artificially reared ones, are, more or less, by a forced will, and somewhat infector.

Now, in the matter of non-swarmers, the queen's powers are taxed rather more in passing from comb to comb by reason of the dummies, than where the combs are a ljacent to each other. As a result, supersedure usually takes place a little sooner than under the normal conditions

in swarming hives; and the will-power of the workers is such that unusually large and vigorous queens are produced to meet the requirements of the situation. I have purchased a great many queens, and have yet to find any that are equal in size to some thus produced.

I firmly believe the workers can develop a queen equal to the requirements of the colony, in a few generations, at most. There are other points of excellence which are contained in the non-swarmer, which I expect to prove more thoroughly by another season's test before placing them upon the market.

Although it has been an off-season I have secured upwards of a ton of fine comb honey, with ample winter stores for every colony.

In reference to improving my stock, I see an advancement after six years effort. My best colonies which have queens two years old have kept in the lead each season and far outstrip the average colony.

One colony, which I consider the best, stored rog well finished sections; and, had the season been a good one, doubtless double the number would have been placed to its credit.

Mr. E. R. Root, in speaking of improved bees, attributes the gain in honey gathering as largely due to the increased length of their tongues. While I have been working for the same, and believe Mr. Root is correct in his conclusion, one fact came under my observation as a distinctive feature of the bees composing my best colony. The bees upon returning from the honey fields showed abdomens unusually large and distended with honey. Furthermore, nearly every bee entering the hive carried a full load. By comparison, I found many bees of the other colonies entering the hives with their abdomens distended so little as to be unnoticeable. I also found this colony gathered much less propolis than any other in the yard.

In view of the above facts I shall make my efforts to improve the stock eclectic combining as many of the best qualifications as possible, to accomplish the desired end.

My stock, some ten years ago, was from J. P. Moore of Morgan Ky., crossed with selected stock from another breeder of yellow bees, which showed a sport of larger workers and drones. In October I supplanted a few mismated queens with some of Mr. Moore's stock, and one from your selected, for comparison the coming season. I shall be careful to eliminate the drones in those colonies as much as possible consistent with maintaining the normal condition, so as to prevent further crossing until the test as to size and working qualities have been made.

JACKSON, Mich., Nov. 27, 1900.



EDUCATION'S use is to stir up and stimulate to investigation.

"FERTILE WORKER" is a misnomer. Workers are never fertilized. Laying worker is the correct term.

IGNORANCE and ugliness are at the bottom of nearly all of the cases of prosecution for bees damaging fruit; so said Mr. Wm. Couse, at the Ontario Convention.

BRICKS were recommended by Mr. J. B. Hall at the Ontario convention, for setting hives upon in the apiary. This saves the decay of the hive-stand.

TACKS sprinkled upon the platform of the wagon upon which bees are to be moved will prevent the hives from slipping about. Mr. F. A. Gemmill, at the Ontario convention, said that even two tacks under the bottom board of a hive will keep it safely in place. WOODSTOCK was the place chosen for holding the next meeting of the Ontario Bee-Keepers' Association. John Newton was elected president.

DAVIJIGHT is allowed to enter the wintering-cellars of many of the members of the Ontario convention, and no ill effects are manifested.

RAISING HIVES from the bottom boards in the cellar in winter may not result in any better wintering of the bees, but the combs come out cleaner and brighter and free from mould.

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HIVES were being discussed at the Ontario convention, when Mr. D. W. Heise ended the discussion by saying that each bee-keeper would have to choose for himself, according to his system of management and locality..

A BANQUET in honor of its ex-presidents was one of the delightful features of the late meeting of the Ontario Bee Keepers' Association. Why couldn't the National Association do something in this line at its next meeting?

THE CELLAR containing bees for wintering is left open, that is the doors and windows are left open, by Mr. C. W. Post of Canada, until the real cold weather comes. During the moderate fall weather the bees are practically in an open shed.

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QUILTS for covering the tops of the frames had some warm defenders at the Ontario convention; likewise did they receive some strong condemnation. With quilts the smoke can be sucked down into the hive quicker by giving the quilts a flapping movement. In examining the bees in the spring it can be done quite easily by simply turning back one

corner of the quilt. Aside from these two points, the arguments were against the use of quilts.

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FERTILIZATION of a blossom by pollen from some other blossom than itself is an advantage, results in better fruit; so said Prof. Fletcher at the Ontario convention. This shows another reason why bees are an advantage in fertilizing blossoms.

CELLAR-WINTERING will soon save enough in stores to pay for the building of a cellar, and the work of packing one hive out of doors is as much work as to carry six colonies into the cellar, so reported Mr. John Fixter at the Ontario convention.

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A PUN, if a good one, is often quite enjoyable. For instance, at the banquet held at Niagara Falls during the Ontario convention, there was an allusion to the green color of the water in the rapids just below the falls, and some curiosity expressed as to what this color was due, when some one suggested that it was green because it had just come over.

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FOUL BROOD was found in 33 apiaries out of 100 that were examined last year by Mr. Wm. McEvoy, Inspector of Apiaries for Ontario. In going to a neighborhood he secured the assistance of the best bee-keeper in that locality, who went about with him, and afterwards kept him informed as to how things were progressing.

THE CHICAGO CONVENTION REPORT is

stringing out to such a length, owing to the minuteness with which it is reported, that it will be impossible for Bro. York to furnish all of the numbers containing it for ten cents, as mentioned in last Review—twenty cents is the least for which they can be furnished, and they are cheap at that price. CHAFF as packing over the brood-nest in winter was condemned at the Ontario convention by Mr. R. McKnight. At the side of the hive where it is kept dry, chaff is all right. Over the top of the broodnest it becomes damp and mouldy. Ground cork, such as magala grapes are packed in for shipment is most excellent. Forest leaves answer well this purpose. Sawdust is an excellent material, but it should be from seasoned lumber.

BEES WINTERED in the cellar do not consume so many stores as those wintered out of doors, but Mr. Hall, at the Ontario convention, called attention to the fact that the large consumption of stores by the colonies out of doors comes from the breeding that takes place early in the spring before those in the cellar are carried out. He approved of taking the bees from the cellar quite early, say in March, if the weather is not too severe, as this starts breeding and gets the colonies in better condition for the harvest when it comes.

THE STEREOPTICON views shown by E. R. Root at Chicago to which were added some English and some Canadian views, 150 slides in all, were shown by Bro. Root at the Ontario convention, where they were greatly enjoyed. The last slide shown was "God Save the Queen," the letters being formed of honey comb built in this form by the bees, and exhibited at the fair by some bee-keeper who had had it photographed. When these words appeared upon the screen, the whole audience burst into applause, and followed it up by singing "God Save the Queen."

Prolificness in a queen was not approved by Mr. J. B. Hall at the Ontario convention. He preferred industry and longevity on the part of the workers. As the honey harvest ends in July, the rearing of a large number of workers that come on the stage of action too late is really a disadvantage. With two colonies

of equal strength, one will often store twice as much honey as the other one stores; it is the possession of qualities that will enable bees to do this that Mr. Hall preferred in place of prolificness. Mr. Hall asserted that the bees of a very prolific queen were seldom possessed of these other desirable qualities.

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CARNIOLANS were greatly praised by Mr. C. W. Post at the Outarior convention. His surplus comes from clover, basswood and buckwheat. He uses a 9-frame hive. He has scarcely any swarming, and makes increase by starting 2-frame nuclei and building them up. Morley Pettit and W. J. Craig were not in favor of Carniolans.

THE NATIONAL ASSOCIATION defends its members as quickly in Ontario as in the United States. I fear most of the Canadians do not understand this; as the matter of Canadians doing something in the line of forming an association of defense was considerably discussed at the late Ontario convention. It was dropped when it became evident that joining the National answered every purpose. One man reported that there were only four Canadians who were members. This alone shows that this point is not rightly un lerstool. Come on, brother Canadians. Join with us, and we will take care of you in your troubles.

FOUL BROOD.

Bacillus Alvei was found in the eggs and ovaries of queens from diseased colonies, by Prof. Harrison of the Guelph, Ontario Agricultural College. He said at the Ontario convention that when foul brood was first introduced into a new portion of the country it is much more virulent. He also suggested that the reason why foul brood was not spread by making foundation from wax containing germs of the disease was because the germs were embedded in the wax. Wax, as usually heated for making foundation,

does not contain the germs, as the heat destroys them, but germs can be introduced into wax warmed only enough to melt it, and made into foundation at thi low temperature, yet foul brood does not develop when such foundation is used. As already explained, Prof. Harrison thinks it is because the spores are embeded in the wax, hence can do no harm.

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THE PAN AMERICAN exposition, which is to be held next year at Buffalo, N. V., will approach in magnitude the Chicago world's fair. Bro. Root, O. L. Hershiser and myself went out to the grounds the next day after the Ontario convention. The grounds comprise 350 acres, and the buildings, while not so large as those of the Chicago fair, are very beautiful; being of the Spanish style of architecture. The decorations and colorings are unusually artistic and beautiful.

By the way, there is some prospect that the National Association will meet there next year. Much will depend upon whether the G. A. R. encampment is held at Denver, Col., and reduced rates given. Thus far the railroads have refused to grant the one cent a mile rate which they have been giving in the past; asserting that they lose too much money by so doing. Cleveland has been making some heroic efforts to secure the encampment and the low rates, but has not vet succeeded. If the usual one cent a mile is secured for Denver, which is very unlikely, we would be in duty bound to go to Denver; otherwise the convention will probably be held in Buffalo sometime in October, when the Irrigation Congress meets there, and low rates can be secured.

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CHRISTMAS EDITIONS of magazines are enjoyed both by the enterprising publishers who get them out, and the appreciative readers who receive them. It has several times been my delight to give a holiday number containing extra pages, pictures, etc., but I must ask my readers to excuse me this year. With the skip-

ping about the country that I have been doing the past month, it has been impos-Nearly all the editorials in this issue have been written while on the train going from place to place. writing this while on my way to our Michigan State convention. Of course, I might have stayed at home and gotten out a handsome holiday issue, and probably had it out earlier, but I always look the ground over carefully and do that which seems best, all things considered. I always say to myself: "What will make the Review most valuable to my readers?" and when they come to read, in the January number, of the good things picked up in my Eastern trip, some that will. I am sure set some of them to thinking, I trust they will agree with me that I chose wisely. Next month several pages of advertising and the index will go out. leaving room for more reading matter than there is in this issue.

THE UTTER bee and peach suit, reference to which has already been made in these columns, was, upon appeal, carried to the circuit court, and has recently been tried; the jury deciding in favor of the bee-keeper after being out only five min-The National Association took great pains and went to considerable expense to win this suit; knowing that if it were lost it would lead to endless persecution of bee-keepers by ignorant or illdisposed fruit growers. Frank Benton was there in his official capacity as assistant U.S. entomologist, and showed by means of drawings that the bees' mouthparts were not adapted to cutting the skins of sound fruit. O. L. Hershiser of Buffalo, N. Y., W. F. Marks of Chapinville, N. Y., E. R. Root and A. I. Root of Medina were also present, and assisted by their evidence and counsel.

One point that was brought out very strongly was that early peaches of the clingstone variety are very likely to decay upon one side. The side next the sun ripens first, and then begins to decay, while the other side is yet hard. The de-

cay begins in small spots near the surface, but, once began, is very rapid in its action. Within a single day after the decayed spots begin to show, the fruit may become worthless. The bees discover these incipient spots of decay and immediately begin working upon them, eating their way into the fruit. Two baskets of this fruit placed side by side, one covered with netting to keep away the bees, will be equally valueless at the end of the day—one eaten out by the bees, the other a mass of decay. This fault of the early clingstone peaches has caused many fruit growers to abandon their cultivation.

MEASURING BEES' TONGUES was described by E. R. Root at the Ontario convention. A cage of bees, a bottle of chloroform, a magnifying glass, a large needle and a micrometer that can be bought at a hardware for 20 cts. are all the needful articles. Put a few drops of chloroform upon a handerchief, place it over a cage of bees, and lay a book over it to confine the chloroform. In a few moments, the bees will be senseless. For some reason the effect of the chloroform is that of compelling the bees to thrust out their tongues. A bee is taken from the cage, its head cut off and laid upon the micrometer with the tongue projecting along the scale. The needle is pressed upon the head, which causes the tongue to protrude its whole length. By looking through the magnifying glass the length of the tongue can be counted off in rooths of an inch.

IS THERE A DIFFERENCE BETWEEN COMB AND BEESWAX?

Dr. Miller and Bro. Root do not agree with my views regarding the difference between comb and wax. Bro. Root says that he can see no difference in wax, whether it is in comb or in the cake. I have never made any scientific tests in the matter, and I don't know as any one has. My conclusions have been arrived at simply from my observations as a bee-

keeper and a consumer of honey; and, if I have been deluding myself, I wish to be set right.

As I understand the matter, naturally built comb is composed of little pellets, or flakes, of wax patted and pressed together by the bees, thus leaving the structure of a comparatively locse, friable nature that is easily broken up into particles or flakes when chewed up with bread and biscuit. Naturally built, new comb might be compared to snow; beeswax to ice. This illustration is too strong. but shows something what I mean melting of the comb puts the particles of wax into closer connection, uniting them into one solid, homogeneous mass. Bingham has said that "butter is butter, but melted butter is grease." The melting destroys the granular charcacter of butter. If any one thinks that butter tastes and feels the same in the mouth after it has been melted and cooled, let him try melting some butter, and allowing it to cool, and then spread it upon some bread and try eating it.

Dr. Miller savs that newly built comb isn't brittle. It isn't, when warm, if compared with glass. This matter of brittleness is one of comparison. Glass is brittle as compared with cast iron, cast iron is brittle as compared with pine wood, pine is brittle as compared with brittleness. Wrought iron is much harder than a boundary yet the latter is broken with a slight bend, while the former may be bent double without breaking.

When we put a piece of naturally built combinto our mouth, and chew it up with a piece of biscuit, the comb breaks up into small particles or flakes, and mixes with the biscuit, as I have before mentioned; not so with comb foundation. It forms into a "gob" (beg pardon) it is tough and leathery, and refuses to break up into small flakes or particles. Bro. Root thinks that a man blindfolded, and fed pieces of comb honey taken promiscuously from sections that had been filled with thin foundation, and from naturally

built comb, would be unable to distinguish between the two. I have never tried this, but I know that when a section of naturally built comb has been given to our children to eat, "all by themselves," it has been all eaten up, "slick and clean;" if given a comb built upon foundation, the first cut disclosed the fishbone, and then spoonfuls would be scooped from the upper side, cutting down to the septum, until the "upper deck" had been cleared, when the comb would be turned over and the honey taken from the other side, leaving a tough, unpalatable sheet of ϖuv .

It was upon this ground, and this alone, that I opposed the deep-cell foundation—that the comb would be tough, and lea'hery, and lacking in the friability of naturally built comb.

I am aware that the thicker the foundation the bigger the "gob" when we chew up the comb, but it will require proof to convince me that comb built upon foundation no thicker than the walls of naturally built comb, will be identical with the latter.

NIAGARA FALLS.

Three years ago, when I visited the falls, it was from the American shore that I looked upon them. I also took a trip on the little steamer, the "Maid of the Mist," which gives the best possible view. Besides this, I went down the famous gorge route to Lewiston, fifteen miles below the falls. In this route the electric cars run down close by the rushing, tumbling waters—so close in some places that the wind blows the spray over the passengers. After the Ontario convention had adjourned, Bro. Root and myself took a car that carried us to a point above the falls, upon the Canadian shore, and from there we walked down the shore until we again reached the village of Niagara Falls, which is perhaps two miles below the falls proper. Above the falls, we walked down to the water's very edge, and looked up the river. Imagine a large field, one containing acres,

and acres, and acres, slanting up gradually and away from you, down over which the waters come roaring, tumbling, dashing, hurrying on for the final plunge. and lashing themselves into a foamy whiteness as they go; if you can call up such a picture you may get a faint idea of the view looking up the river above the falls. There is plenty of evidence that the rocks over which the water goes in a great, solemn, majestic curve are gradually wearing and crumbling away. What were once "horseshoe-falls" are now Vshaped, the center having worn back and fallen down. We walked out several rods upon rocks where the green waters had once gathered themselves for their final plunge.

The Canadian government has taken great pains to beautify a park that extends a long distance both above and below the falls. Upon a point about opposite to the American falls is a rustic summer house, over the door of which, spelled out in rude letters of bark, are the words INSPIRATION POINT. Well named! It is doubtful if, in the whole world, a more inspiring view can greet the eye.

Upon the American side the commercial spirit has predominated, and great factories stand upon the brink of the gorge, through the rocky walls of which tumbles the water that has turned the wheels above

Looking down upon the river as it narrows into the "rapids" just below the railroad bridge, it seems not more than four or five rods in width, yet we found it impossible to throw a stone farther than to the water's edge. When first thrown it seemed as though the stone might go half way across the stream. Down, down, it goes; and we begin to doubt its going quite so far. With difficulty the eve follows it as it goes into the bank a rod or two from the water. I believe Bro. Root landed one pebble in the water's edge. The height above the water is what deceives the eye as to its width and distance.

EXTRACTED.

LARGE VERSUS SMALL HIVES.

A Small Hive may be Best Even with a Prolonged Flow.

Upon another page in this issue, that most excellent bee-keeper, C. A. Hatch, of Wisconsin, gives his testimony in tayor of a ten-frame Langstroth hive; and, very wisely, gives his reasons for this preference. I have no douet that the plan of moving to the outside the central combs containing the young larvæ, would result exactly as he says it does. If the flow is short, those outside combs of sealed brood are practically dummies. expensive dummies, to be sure, but not so expensive as it would be to leave the brood combs in the central part of the hive where brood would be replaced with brood right in the height of the harvest. This plan is the one followed by Chas. Koeppen of this place, and, by repeating the operation again in ten days, and cutting out queen cells, he practically overcomes swarming. Of course, all of this work takes some time, and it comes at a busy season, and, if it could be avoided, it would be better. My own belief is that, for localities like Michigan, a smaller hive, one in which these manipulations are not needed, is better. I have admitted that my friends who contend for a large hive where the flow is prolonged may be coreect, but here is a man, Mr. M. A. Gill, who, I believe, once lived in Wisconsin, but now has his home in Colorado, that favors 8-frame hives even where the flow is as long as 91 days. Here is what he says in Gleanings:-

A person can manage and care for more bees here run entirely for comb honey, during our long season, than in the East, where the honey season is so short and sweet. I have been trying hard for years to like a large hive; but this year has convinced me more than ever that I, at least, can secure more surplus honey with an eight-frame hive than with any thing

larger, especially where the season is as long as it is here. The honey-flow with me lasted 91 days, and 1 find it takes a good queen, even to her utmost, to keep an eight-frame hive well supplied with brood (as she must) for that length of time. My best colony for honey filled 12 24-lb. supers; 11 picked colonies in eight-frame hives made 100 24-lb. cases of honey, while all my eight-frame hives averaged 173 lbs. of comb honey.

I do not wish to open the controversy about large vs. small hives, but I candidly believe that, where a person intends to keep a large number of colonies, and where the season is as long as it is here, and where the owner intends to (and does) meet all the demands of the bees both fall and spring, and where there is female help, that, taking into consideration the cost of supplies, and the difference in honey delivered, there is more real profit with eight-frame hives than any thing larger.

The editor replies as follows:-

With regard to the eight-frame hive, I noticed that it is used very largely in Colorado, although there was a tendency to use the ten-frame width; but the use of that size was confined almost exclusively to those who made the production of extracted honey a specialty.

There can be no doubt that the eightframe Langstroth hive is well adapted to most localities in the United States. While some other size or style may excel it, yet on an average it meets fairly well the needs of most localities and most beekeepers. And speaking about the size of hives, I am a little inclined to believe, from testimony that has been offered, that a seven-inch brood-chamber, tenframe Langstroth width, for the production of comb honey, is a little better, especially if the honey-flows are very short, as they are in many places in the northern part of the United States. It is certainly true that a small hive in any case is better for such localities than a large one, except, perhaps, in some instances where an outvard or two are used, and the bee-keeper can not keep some one to look after swarms. In such cases a large hive often finds favor.—ED.]

I too, have noticed the tendency to shallower hives and to more frames. I have also noticed the tendency to fixed frames. Taken all in all, the tendency is drifting towards the Heddon hive. The Heddon hive may not be adopted. A substitute may be accepted. But, in my

opinion, Mr. Heldon builded better than many gave him credit for when he invented the hive that bears his name. For contraction and expansion, for tiering-up, for accomplishing a great many things without the handling of a frame, the Heddon hive stands par excellence.

CUBA AS A BEE COUNTRY.

Also Something Regarding its Insects and Climite.

Now that white-winged peace is again hovering over the "Queen of the Autilles," enterprising young Americans with plenty of push and grit are casting longing eves towards the nectar-laden fields of this sunny isle. Onite a number are already there; and, whether we "stayat-homes" like it or not, it is quite probable that we may find, ere many years, that Cuban bee-keeping under Yankee management is far different from what it was in the dark days of Spanish rule. With these facts in mind, the following article, written by H. G. Osborn, and published in Gleanings, is of unusual in-Mr. Osborn savs:-

After the lapse of four years, September, 1900, finds me once more on Cuban soil. But what a sight meets the eye of the visitor if he takes a ride in the country as I did a few days after my return! Charred and crumbling ruins on every hand bear silent testimony of the awful ravages of war. That this fertile island, so lavishly endowed with nature's wealth, should have been chosen by fate to be the slaughter-ground of tens of thousands of her brave sons between 1492 and 1900 seems indeed an underserved fate.

That the nineteenth century will mark the dawn of an era of prosperity and freedom for a young and deserving generation, there can be no doubt. The soil over which has run so much blood, which three different armies have fought for, holds in its embrace vast wealth awaiting the advance of modern civilization. Although we are only 90 miles from the nearest point on the Florida coast, still in that distance great changes have taken place. We find a different climate and a far different people; a country that is very rich, and a climate that is compar-

atively mild, with the exception of about three months in midsummer, when one would almost wish he were in Greenland, in hopes that the change would do him good. But we can not have climate and conditions made to order, and so I will venture to say that any man with a little money, and lots of push and perseverance, willing to put up with a hot damp climate, and who is not afraid of flea-bites or sticky mud, can, I think, make a good living here now, as the price of everything is high, and there is an unlimited demand for everything raised here at the present time.

The bee-keeping industry, so far as I can find in the short time I have been back, is advancing quite rapidly. Several parties of northern capitalists have come here and started in the business on a large scale, knowing absolutely nothing about the climate or the difficulties to be overcome, some not even knowing a worker from a queen, but fully aware of the fact that flowers produce honey, and that bees gather honey; and also, having read or heard some one say that flowers grow profusely here, they thought by bringing a few thousand hives here, or buying them here, they can set them down anywhere, and the bees will go to work and fill the hives with wealth, and all the owners have to do is to gather it and sell it. But one or two summers, when the moon gets just right for the moth to have its summer appetite, and the fast-spreading foul brood commences at the other end of his apiary, he will wish he were a boy again unless he knows just what to do and how to do it.

The advisability of first coming here to visit those of us who have large apiaries, offering a fair price for information that has taken us years to acquire; inquiring into and studying the conditions that go to make up a successful year or crop; acquainting oneself first with the most successful hive in use here, together with the other fixtures that go to make up a large apiary; the best strain of bees for a winter honey-flow, and many other im-portant hints that they might pick up, which would be of vast importance to a beginner here, all of this had never been taken into consideration until it was too late. After one has spent thousands of dollars, and brought here carloads of fixtures which may be all right at home but not in Cuba, the sad truth dawns at last, and the new comer becomes fully aware of the fact that he has made a bad mistake. He returns home and paints a dark picture of bee-keeping in Cuba among his friends, saying, "I have made

a miserable failure of it, lost all I put into it, and am thoroughly disgusted and discouraged. If you will profit by my sad experience you will stay where you are. It is unmercifully hot; the fleas will eat you alive; it rains every day, and the ground is so sticky you can't step out of the house without sticking fast. Take my advice, and stay at home and leave well enough alone." That is about the way their story runs.

Well, take my advice too-one who has lived here 12 years-and stay at home unless you first come here and find out which is the best, what are the difficulties to be battled with, how to best fight them, whether or not you like the climate, and the insects which find the rich red blood of the new comer, the very best stimulant for a good appetite. When I hear of these big places starting up under perfectly green management with a liberal sprinkling of foul brood as a side dish, I merely shake my head and feel the deepest sympathy for them, for my long experience here has taught me only too well what the ultimate result will be in nine cases out of ten. Remember, one hundred dollars may save you several thousand; that a reaction will come before long is certain; then we shall see who are the successful ones.

The surplus season is now at hand, and the bees are in the best condition I ever saw them at this time. They are fully two weeks ahead of what they used to be here on this range before the war. I shall commence extracting on Monday, October 15, ten days earlier than we ever commenced here, and that was the year we took 73,000 lbs. from 600 hives in five months.

Cuba is in an excellent honey producing country. There is no use in wasting space in discussing that point. It is lack-

ing in roads and transportation facilities; also in the comforts of civilization and society as we nuderstand them here in the United States. Insect pests are no slight drawback to the enjoyment of life. The language is Spanish, Many things are entirely different from what they are here; and it is impossible for one to realize these differences without having first at least visited the country. We who have families, and comfortable homes. and some good business here in the United States better stay where we are; if any one is to go to Cuba let it be young men of enterprise with no families to leave behind. Of course there is foul brood in Cuba: so there is in this country. Italian bees seem to withstand the ravages of foul brood better than do the blacks. Possibly this is because they store honey attimes when the blacks are idle, and foul brood does not make much headway when honey is coming in.

The shipping of bees to Cuba has often been disastrous; but this has often been due to poor management. The time to ship bees from here to Cuba is in the fall, after our honey harvest is over, and the weather is cool. No heavy combs of honev should be sent, as they will be more easily broken down; besides, the harvest in Cuba begins in December and lasts until May or June. There must abundant ventilation both above and below, and a space above the combs for the bees to cluster. In addition to this, the bees must be watered daily.

General Index to Volume XIII.

INDEX TO SUBJECTS.

Adulteration Case, the Hakes-Heddon	157
Age of larva: Chosen for queens	.17
Apis Dorsata, An Attempt to Imp. rt	323
Association and Co-operation the most hope-	
ful field	100
Bait Sections versus Drawn Combs	150
Batt Combs	150
Barrels versus Tin Cans	56
Belgian Hares, beware of the Fairy Tales Re-	
garding	264
Belgian Hares, Some of the Profits that May	
be Expected from	221

53
98
50
54
20
46
54
12
54
18

mack apair need, threet or.	20	Fairs Going to the	ξ£1
Black Brood Ar sing from Imperfectly No. r-	45		26. 12.
ished Brood	75	Field, Which is the Most Hopeful . 11	11.
	1.	Hy in Gathering Neccar, How far Bees may, a	1
Bottles for Stakes to hives Bottles of Honey, Using hot wax on the	55	71, 488 Foul Browly Colonies that are Distroyed.	
Corks of	21	Compensation for	57
Brace Combs From Separators, Separa-		Foul Brood Law Undestrable Features of	
	47		1.
Brace Combs, how to Successfully Remove——3 Brood-Nest at the Opening of the Harvest, the,		Foul Brooky Hency Danger from the Impor- tation and Shipping of	35
Brood Diseased	m2		. 4
	191	Food V due of Honey	1.1
The state of the s	24	Glass Cheaply, How to get to the Gobacks Dr. Miller's	47
Buzz-Saws, Home-Made Carbolic Acid	155		
Carniolan Pees	255	Golden System of P officing Courb Horey 3	4.7
Cappings, Preventing the B ting of	22;	Grading Packing and Shapping Honey	1
California's Honey Resources	~;	Grading Honey . 5	
Cappings, Bees Biting	320	Graves When Bees are on the Bunches Gath-	1.4
Candied Honey, Good Words for	16	ering	= 1
Candied honey, Selling	= 1		V.T.
Camera for making photos, for half-tones	21		
Care of honey Cellar Wintering, What pegice of winter-se-	297	Hives and traines, Steep' 2. Hives and Proper Manuel ment in Projection	220
verity calls for	< I	Hives and Proper Management in Producing Comb Honey, The Size of Signature Comb Honey, The Size of	45
Clipping Queens	32,	Horticulty 1st, Value of Bressto the	\
Closed-End Frames for a Glucy Locality	111 300	The state of the s	(E f .
Climps, Wintering Bees in Clipping a queen's Wing	255		25.4
	29.1	Honey Makers, the	5.5
Chemistry of honey and how to Defect Adul-		Improve your stock by Succion	1 4 1
	203	Imported One as are nork	5-2
Citicago Controlleron	250 344	Improvement of Bees in the Direction of Non-Swirming	(nu
Comb honey with Heddon hive, Production	1,000	Improvement in Bres	1.4
of	101	Improvement in Stock the Most Hopeful	
Compensation for Foul broody Colonies that			1 >
	115 271	Introducing Queens 223, 256, 2 Introducing Queens by the Hatching Brood	2 3
Convention Come to the	255	Pien	110
Convention, the Chicago	221	Int a hading gracens by the Use of Tobacco	
Controller Report	255	Smoke 251, 311, 12	359
Cover, the Review's New Co-operation Needed in Bee-Keeping	11=		32I
Combs Suitable for Brood Rearing, Are Ex-		Leteral Communication in Supers Secures a	,
tremely Old	121	Better Filling of Sections	3.43
Color of Wax Effected by slow Cooling. Is the,	7.70		3.15
Colorad as a Bee Count'v	= .	Litting of Hives Avoided, the Heavy Louded in a Wagon, how Honey Should be.	155
Colorado honey Producer's Association	. 45	1 ration, influence of	243
Criticisms Regarding Foul Brood or Black		Locality Consider well the Locality and Attend Strictly to Dusmess,	13
Brood	19	Locality and Attend strictly to laismess,	
Criticism to be Discontinued, Department of, Culley Death of C. P.	340	Know your Locality, Both high and Low Land Needed	2
Cuba, its Advantages and Disadvantages as a		in an Ideal	, . ;
Bee-Country	319		~*1
Decoy Bee hives	101		_*()
Delaware Apiary, A Neat Death of the Editor - Father	348	Locality, the Influence of Locality, Some of the Leatures of Bee-Keep-	225
Diseases Among Bees Various Forms of	273	ing that are Effected by	25%
Drones the Importance of	200	Locality. If wo one man Understands his	
Editor Takes an Eastern Trip, the Eggs, Bees Moving	347	Mandelbauri - Article in the Dec. Review,	
Experience Comes from hasty Ventures, Cost-	1-	Comments on M: Medicated Syrup Teerding Bees	11
ly	7.1	Measuring up Dead Bees	113
Experiment to Prove the Age of Larvae Cho-		Michigan in it two Much	115
en for Queens Francisconts Sand of Anicultural	151	Moving a Cayloid of Rices in November Moving Bees to Fall Pastures	3.5
Experiments Need of Apicultural Experiments, how can we Secure More Uni-		Moving Bees in Winter	215 196
torm	314	New Inventions, More	2.3
Exhibiting Bees and Honey at Fairs	245	Newton, Home of J. lin	5
Extracted Honey with Sframe hive, Produ- cing	60	Neglects in the Aprary I flect the Profits,	
Extracted Honey its Production and Treat-		how Little Non-Swarlang Hives	153
ment	7.1	Noisy in the Cellar, why Bees are	112
Extracted honey Production	5	Nuisance Ber Keeping as a	202
Extracted Honey at a Good Profit, how to Produce	314	Organization Competative Organization The Eulephs of	291
Extracted honey, Methods of Producing	714	Out-Aparies, Fetablishing	3.1
Extracted honey, Methods of Producing Extracted Honey, Production, Care and Sale		Out-Abouty. Man ging an	-77
of	103	Onica patrice with a consequential standard	
Fairs, Exhibiting Bees and Honey at	245	ing	250

Overstocking Paint, a Cheap but Durable Packages for Shipping Honey Peddling Honey, Some Points in	54	Winter, Moving bees in
Paint, a Cheap but Durable	256	Wisconsin State Bee-Keepers' Asso., Picture of the Members of the St. Wisconsin State Bee-Keepers' Association 21 Workers Laying Eggs at Will 106
Packages for Shipping Honey	. 255	of the Members of the
Pedding Honey, Some Points in	- 324	Wisconsin State Bee-Keepers' Association 21
Prices of hives are too high	1.10	Workers Laying Eggs at Will
Peddling Honey, Some Points in Phonetic Spelling Prices of hives are too high Protection that is Novel, Cheap and Effective	140	
Spring	105	INDEX TO CORRESPONDENTS.
	223	
Queen-Excluder, A Novel	161	Aikin R C. 41, 56 Alley Henry 159, 359 Asoinwall L A. 46 Baldridge M M. 310 Barber Mrs. A. J. 328 Parber Ira 10, 110 Bineham T F 53, 226 Bix by John D. 318 Burrell H D. 103, 143, 251, 255, 330
Queen-Traps	137	Alley Henry 159, 359
Queen-Buyers, now they Sometimes Mis-		Poldridge M. M
Oneen Cells Separable	159	Barber Mrs. A. I
Oneen Breeders' Troubles	349	Parber Ira
Queen Rearing Details told in Plain Langu-		B'ngham T F. 53, 226
age	143	B'xby John D
Queen Rearing, The Best Size Frame for,	145	Burrell H D 103 143, 253, 285, 330
Queen Rearing in all of its Detaits, Commer-		B x by John D. 318 Burrell H D. 103 143, 253, 255, 330 Cady M P 105 Unite Herbert 37 Corres bull by Poly. 337
cial Queen Breeders' Association, The National,	1.46	Coggshall Dr. Bela.
Queen Cells even During a Dearth of honey.		Cogs half Dr. Bela 221
Getting Good	>.6	Cook A. J. 168 Crane J. E. 186 Culley C. P. 14
Oneen Cells in that Part of the hive Where		Culley C P 14
the Queen Can't go, Why Queens in Shipment, Right age of Bees to	217	Dadant Chas
Queens in Shipment, Right age of Bees to	•	Daven of C. 71, 199, 30
Accompany	157	Deplittle C. M. 213
Accompany Oncens, Superior Breeding Oncens are Poor When Bees Choose the Lar-	57	Daduit Chas. 226
v.e. why	2.7	Ferris C G
Quotations, honey	156	Fenton, Geo. A
Resolutions, Influence of	323	Flower W. E
Retailing Extracted honey	. 259	Flanagan E. T 344
Releasing Queens at Night	. 157	Colligan I E
Robbing Ree Moths and	. 230	Getaz Adrian
School Children. Talking bees and honey to	1.120	Gillette C. P. 220
v.c. why Quotations, honey Resolutions, Influence of Retailing Extracted honey Releasing Queens at Night Robber Bees Robbing, Bee Moths and School Children, Talking bees and honey to Seasonable Articles Secretion of Wax Sections, Shall we adopt the Tall	356	Gilstrap W. A. H
Secretion of Wax	324	Grimsley J. O
	35	Greiner F 40
Section-Press, McCartney	, 107 83	Hatch C A 245
Sections Starting bees in	159	Hasty E. E. 201
Selling honey	21.0	Hahman Wm
Selling honey in Poor Years	330	Hill II E
Selling Card ed honev	sń	Howe Harry S 12, 120
Shipping Coses, Den e-Beck Shipping honey, Some Points in	148	Hutchinson W Z
Shipping Oueens	254	I'vde H. II 30, 216, 250
smoke I ffecting honey	255	Jones B F 311, 263
Smcke Injures the Flavor of honey	321	Jones E R 217
Spelling Wonders of our	5,11	Johnson E. A 251
Spring Management and noney Product on	102	Lathron ' arry 21 60 50 125 228
Spring Management and honey Production Spring Management of bees Stores in the Fall, Estimating the Amount o	1 50	Leonard L. S
starved brood	114	Mandelbaum M H 140
Striking at Cross Tees	195	Masen Dr. A. U 12
Stimulative Feed ug of the bees in the String,	, IIO	Martin J. H 38, 87, 232
stores for Wintering bees, Good	257	McHity'e J. P
Supergranated hers that die in Winter	40	McGrew T. F. 261
stores for Wintering bees, Good . survival of the P ttest Superannated bees that die in W nter, Amount of	5.2	McGnire G W 108, 280
Suppositions are of Small Value	50	Miller A C 317, 342
swarming, Preducing Comb and Extracted		Miller E S 191
honey Without any Swarms, Managing of	155	Miller C. C
swarms, Managirg of System for Managing	137	Miner H. P
	Tub	Moe Mrs. G. E
Temperature of the cluster in Winter	1.2	Norten J. G
Fougued Lees, breeding for Long	292	Norten J G 206 Old Grimes 101 Otto J. F 101
Fongues, Measuring bees' 224,	3.5-2	Otto J. F
Fougues, Length of bees' Fobacco Smoke Introducing Oneens by using	2.4	Pickard Miss Ada L. 6, 312 Pridgen W. H 20, 146
fobacco Smoke, Introducing Queens by using 251, 250, 203, 325, 311		Ouirin H G Si7
Fravel Stain	111	Rauchfuss Frank 45
urine nonev	255	Rising J. H
incapping Knife, heating the	53	Root I, R. 58, 228, 262 Salisbury F A 226
ventilation	.53 254	Scholl Louis 226
Vinegar, honey	128	Smith J. Colby
Wax From Utensils, cleaning	254	Smith J. Colby
Wax Secretion by Old bees	:17	Stachelhausen I. 45
Nay Extractor Impreventents in the Ferris.	155	Taylor R. I. = 10, 50, 111, 227 Thompson F. I. :
Wintering of bees, Indoor Wintering Problem, the	321	Victor W. O 74
	4.14.1	

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so I far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attrached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells scaled except the row of cells next the wood.

No.1.—All sections well filled, but combs uneven or crooked, deteched at the bottom, or with but few cells un-ealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, order and dark. That is, there—ill be "fancy white." No. I, dark." etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent, when a shipment sells for as much as one hundred dollars.

CHICAGO—We quote as follows: Fancy white, 16; No. 1 white, 14 to 15; fancy amber, 12 to 15; No. 1 amber, 16, fancy dark, 16; No. 1 dark, 8; white, extracted, 7½ to 8, amber, 7; dark, 6½ to 6½ to 6½ to 6½ to 6½.

R. A. BURNETT & Co.,

Nov. 19 163 So. Water St., Chicago, Ill.

CHICAGO -Fancy white comb honey, 16; ets. Other grades of white, as to quality and package, 14 and 15. Author, 12 to 11; buckwheat, 16 to 12, Extracted white we are selling at 8, dark, 7, Beeswax, 26.

S T FISH & CO.

Dec. 15 159 So. Water St., Chicago, Ills.

NEW YORK. There is a good and steady demand for all grades of comb honey but very little is coming into this market. It producers have anyon hand we advise marketing it at once. We quote as follows: Fancy white comb honey its to 65, No. 1, white 14, No. 2, 12, 0, 13; buckwheat, it to 15, beeswax firm and in good demand 28. No lerge demand for buckwheat extracted as yet, some sales being made at 51, cts.

FRANCIS H LEGGETT & CO

Nov 21 W. Broadway Franklin & Varick Sts.

NEW YORK -Good demand for all grales of comb honey, and fair demand for extracted supply fairly good considering shortage. Bees wax firm We quote as follows: Fancy white, 12, No. 1 to 15, taney anther, 12; fancy dark, 11; No. 1 dark, 10 white, extracted. St amber, 7 to 7½, dark, 5½ to 6; beeswax, 25.

HILDRETH & SEGELKEN,

Nov 20. 120 West Broadway, New York,

BUFFALO-Prices have been held too high and some dealers are stock and we don't advise sending here if more than quotations can be got elsewhere. We quote as follows: Fancy white, 15 to 16; No. 1 white, 13 to 14; fancy amber, 10 to 12; fancy dark, 9 to 10; bees-wax, 25 to 28.

BATTERSON & CO.

Dec. 15. 167 & 169 Scott St., Buffalo, N. Y.

KANSAS CITY—Receipts are light, and demand is firm at prices given. We advice shipments. We do not look for much it any decline in market for some time, as it seems that nearly all of the honey has been marketed. We quote as follows. Faucy white, 15 to 15½: No. 1 white, 14 to 15; fancy amber, 13 to 14; No. 1 amber, 10 to 12; fancy dark, of white extracted, 8 to 0; amber, 7 to 7½; dark, of 2 to 7; beeswax, 22 to 26.

W. R. CROMWELL, FRUIT & CIDER CO., Nov. 10. 423 Walnut, St., Kansas City, Mo.

- If you wish the best, low-priced -

TYPE - WRITER.

Write to the editor of the Review. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Has Arrived.

The time has now arrived, when bee-keepers are looking out for their queens, and sypplics, and your name on a postal card, will bring you prizes of queens, bees, nuclei, bee supplies, and a caralogue giving full particulars, with a full treities, on how to rear queens, and bee-keeping for profit, and a sample copy of "The Southland Queen," the only bee paper published in the South. All free for the asking.

THE JENNIE ATCHLEY CO.,

Beeville, Bee Co. Texas.

I have several hundred

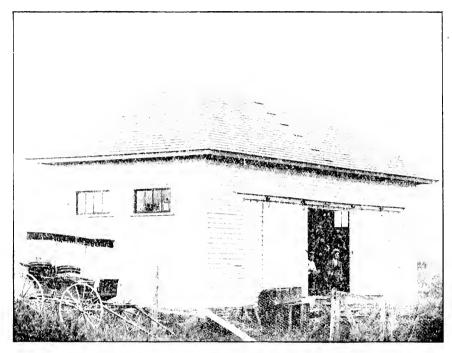
QUEEN CAGES

of different styles and sizes, made by C. W. Costellow and I should be pleased to set d samples and prices to any intending to buy cages.

W. Z. Hurchinson, Flint, Mich.

THE
A. I. ROOT CO.,
10 VINE ST., PHILADELPHIA, PA
BEE-SUPPLIES.

Direct steamboat and railroad lines to all doints. We want to save you freight,



This is the Flint Belgian Hare Rabbitry, the home of the celebrated bucks Palace Gold, imported Britian Pride, son of Lord Britian, and Kahiki Prince our new imported buck, son of some of England's most famous champions. Our stock of imported and domestic hares is the most complete of any Rabbitry in Michigan. If you want the finest stock and the lowest prices. Write us at once.

The Flint Belgian Hare Association, Flint, Mich.

Our Fall Specialties Are your Fall Necessities—

- SHIPPING CASES, FIVE
- 6 GALLON CANS, DANZ CAR-TONS, AND CASH OR
- TRADE FOR BEESWAN

Send for Catalog.

M H. HUNT & SON,

Bell Branch, Mich.

Please mention the Review.

-If you are going to-

BUY A BUZZ-SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glid to make you happy by telling you the price at which he would sell it.

If You Wish Neat Artistic



Have it Done at the Review.

HOW THE DEALER HELPS.

When your honey is ready for the market your trouble is but half over. The next thing is to sell it to advantage. That is where we can help you. We can't produce a pound of honey in a year, but we sell many car-loads every year.

We know when to sell honey, and where to sell it.

If you consign your honey to us, your interests become ours, and we are in communication with every part of this land where honey is in demand.

If you prefer to sell outright, we are in the market for buying, in any quantity, for eash.

Francis H. Leggett & Co.

W. Broadway, Franklin and Varick Sts.

New York.

Queens.

W. II. Laws has moved his entire apiaries to Round Rock, Texas, where he will rear queens the coming season. The Laws strain of faultless, 5-banded Italians are still in the lead. Breeding queens of this strain, \$2.50 each. He also breeds leather-colored, from imported mothers. Tested queens, either strain, \$1.00; 6 for \$5.00. Untested, 75 cts.; 6 for \$4.00.

W. H. Laws, Round Rock, Texas.

Phase ment on the Keera

WANTED HONEY

Would like to hear from parties having honey to offer.

Wanted Extracted Clover and Basswood, such as suitable for bottling trade; also Fancy White Comb-Honey in no-drip shupping cases. I PAV PROMPTLY ON DELIVERY, and refer you to the A I. Root Co., or The Brighton German Bank of Cincinnati, Ohio

C. H. W. WEBER,

2146 Central Ave., Cincinnati, Ohio.

Please mention the Review.

Exhibition Hives.

I shall probably make no more exhibitions of bees and honey at lairs. I have too many other irons in he fire. I have about a dozen nucleus exhibition hives that I would sell for 50 cents each. They are nicely made, with glass in one side and wire cloth on the other. Six of them are painted a bright vermillion and the others a bright blue. They are of the right size for taking one Langstroth frame. They cost \$1.00 each to make them

I also have about 100 of the old-style Heddon super, of the right size to use on an 8-frame, dovetailed hive. This is the best super there is if no seperators are used. They cost 20 cents each to make them when lumber was cheap. They are well painted and just as good as new, but I would sell them at 15 cents each.

W. Z. Hutchinson, Fliut, Mich.

Bee - Supplies.

Root's goods at Root's prices. Pouder's honey jars. Prompt service. Low freight. Catalog free. Walter S. Pouder, 512 Mass. Ave., Indianapolis, Indiana. Only exclusive bee-supply house in Ind.

Please mention the Review.

Special Offers.

GLEANINGS IN BEE CULTURE

IS AN ILLUSTRATED SEMI-MONTHLY, 32 PAGES AND COVER AT \$1,00 A YEAR.

Offer No. 35.

(See back cover page.)

Offer No. 24.

If you order \$10.00 worth or more of goods from our catalog at regular prices, or from our advertised dealers, if you give us name of dealer, paying cash for them, for 50 cents more you can have Gleanings for one year.

Offer No. 25.

For \$1.00 we will send Gleanings one year and a Clark smoker, postage 20 cents extra. Or, for \$1.25 we will send the Corneil smoker, postage 25 cents extra.

Offer No. 27.

For \$1.75 we will send Gleanings one year and our No. 1 Shoe Repairing Outfit, by freight or express, not prepaid.

Offer No. 36.

Gleanings 1 year and A B C of Bee Culture, 1900 edition, for \$1.75. Postpaid.

Offer No. 37.

Gleanings to yourself two years, or to two names one year, and Post Fountain Pen, all for \$2.50, or Pen, your subscription, and two new subscribers to Gleanings for \$3.00.

Clubbing Rates.

As an inducement for our subscribers to renew promptly, which saves us considerable time, we offer the following rates for Gleanings one year and a year's subscription to any of the following papers at prices named,

For One Dollar Only.

Gleanings and your choice of the following:

Northwestern Agriculturist, American Poultry Journal, Reliable Poultry Journal, Agricultural Epitomist, American Poultry Advocate, Farm and Fireside, Poultry Monthly, Poultry Keeper, Farm and Home, Farm Journal, Farm Poultry.

For One Dollar and Ten Cents.

Gleanings and your choice of the following:

Practical Farmer, Michigan Farmer, Kansas Farmer, Ohio Farmer, Indiana Farmer.

For \$1.25.—Gleanings and Rural New-Yorker.

> Gleanings and Woman's Home Companion. Gleanings and National Stock-

man and Farmer.

For \$1.50.—Gleanings and Cosmopolitan or McClure's Magazine, or American Gardening, or N. Y. Christian Herald.

For \$2.00.—Gleanings and Country Gentleman, or Pacific Rural Press.

For \$2.50.—Gleanings and Review of Reviews.

For \$3.00.—Gleanings and Scribner's Magazine or Scientific American.

Old as well as new subscribers may take advantage of these several offers, but all arrears or back subscriptions must first be paid at \$1.00 a year. Refer to the special offers by number to avoid mistakes

The A. I. ROOT CO. Medina, O.

Quality, Promptness,





Price.

We have the best mechanics that money can hire; the best machinery that money can buy. We use the hollow-ground, smooth-cutting, rip and cut-off saws and the work is fine. We have many special machines adapted to securing the best possible finish with the least possible We buy the best grade of of lumber direct from the mills. make every device the bee-keeper invents for profit and ease in manipulation of bees. We carry large stocks all the time. We want your trade. We want to hear from you whether you buy or not. trouble to answer questions. Please write us.

We are very prompt shippers. know that you order goods because you want them. We make up a large supply during the winter and pack them in 500 sections in a standard packages. crate and 5 brood chambers in a package, 5 supers in a package. In this way we can handle a large business in a short No annoying delays.

The business out-grew its humble quarters, and, in 1897, 'a stock company was formed and the business moved to Hadson, Wis., where the \$60,000 plant of a defunct furniture company was bought at a bargain, thus securing abundant power, room and machinery.

The floor space of our factory is 15,620 square feet. One ware house has 30,000

square feet all under roof.

With the view to making it an object to Wisconsin and Minnesota bee-keepers to trade with us we have revised our prices, and call your attention to the fact that we are offering you as good a class of goods at a price delivered at your railroad

station as other dealers will ask you at their home office. By a comparison of catalogs you will be able to verify this statement. The reasons why we can do this are many. We are in a timber region where lumber is cheapest. We conduct our business personally, and have no high salaried officers. We have no branch houses or agents with their attendant expenses. We sell the goods to you as near the cost of production as good business will allow. Our competitors in St. Paul and Minneapolis are buying their section lumber in Wisconsin and their bee-hive lumber in Canada, Michigan or Wisconsin as the case may be, and paying freight on the raw product to their eastern and southern factories, the result is that their section lumber is costing them \$3.00 to \$5.00 per 1000 more than ours is costing us; and their bee-hive lumber is costing them \$4.00 to \$8.00 more per 1000 feet than ours is costing us; then they carload the stuff to their branch houses and have to add the freight and cartage to and from their store-houses and pay an agent his commission, all of which expense we do not have.

Hudson is the land of saw mills and cheap lumber, and the best quality of white pine, for hives, and the choicest of white winter-sawed basswood for sections can be bought at very low prices. The Interstate Box & Mfg Co. also makes boxes and crates and is thus able to utilize the dark lumber and waste. A dry kiln insures a supply of thoroughly seasoned

lumber.

On all Orders of \$10.00 or More We Pay the Freight.

INTERSTATE BOX & MF'G CO., Hudson, Wis,

Longest Tongues!

For two years I have been advertising and selling a superior strain of bees. knew that they were really superior, that they stored more honey than any other strain of bees with which I was acquainted, and that others who had tried them had the same report to make; I knew that they were gentle and hardy, as well as industrious, but just why they should store more honey I was unable to decide. possible that I do not now know why, but, at last I have got a hint—they have very long tongues. The average length of bees' tongues is 16-100 of an inch, while these bees have tongues 23-100 of an inch in length. Only one other report has been male of bees having tongues of this length. This breeder, who has been furnishing me queens, has been breeding this strain of bees for more than 20 years. always selecting the best to breed from, and, for this reason, this trait, or peculiarity, that of having long tongues, must have become fairly well fixed—much more so than in that of some chance sport. The discovery of this reason for their superiority is the source of considerable satisfaction to me. Heretofore, I could only assert that the bees were superior, that they would store more honey, but I could give no reason why, except that this trait had been developed by years of selection and careful breeding; now I can say why, or, at least, give a reasonable reason why.

I wish to repeat what I have already said several times, viz., that it is impossible for a bee-keeper to invest a small sum of money to better advantage than by introducing this strain of bees into his apiary. It will repay him a hundred fold—perhaps a thousand fold. In addition to their known length of tongue, there are also the additional traits of hardiness, and gentleness—something well worth considering.

To those who are thinking of trying this strain of bees, I would say don't wait until next spring before sending in your order. Last spring, when I began sending out queens, there were orders on my books for nearly 200 queens. Orders are already coming in to be filled next spring. They will be filled in rotation, so, if you wish to get a queen next spring, send in your order this fall. The price of a queen is \$1.50; but safe arrival, safe introduction, purity of mating and entire satisfaction are all guaranteed. The queen can be returned any time within two years, and the money refunded, and 50 cents additional sent to pay for the trouble. The Review one year, and a queen, for only \$2.00.

WOODLAND, Ills., Nov. 20, 1900.

Mr. W. Z. Hutchinson-

Can any more of those queens be purchased of you next season. The one I bought of you last June out-stripped everything in this vicinity. As a breeder, she certainly capped the climax of anything that ever came under my observation in the bee line. And her offspring—well, they are simply marvelous as workers. From her colony, in September, I extracted of 51bs. of honey of the finest quality; and, remember, the honey season here was a very poor one. There are a number of apiaries in this vicinity, and I do not know of one that will average to lbs. per colony. And I want to add right here that the cappings of the honey in this colony were of snowy whiteness; and, to day, as I put this colony in winter quarters, I find the eight combs well filled and capped with that same snowy whiteness that was so conspicuous in the supers. I stand ready to challenge any apiarist in this locality to produce bees the equal of these as honey gatherers. Two of my friends wish to get queens of this strain, and I certainly want more of them if they can be gotten.

Yours respectfully, C. E. AURICK.

ODDS and ENDS

I am about to move to my new house, which is on a small lot with streets on three sides of it, and I shall be compelled to give up the keeping of bees. I have a few odds and ends that I would like to dispose I have a two basket, second-hand, Ferris wax extractor that cost \$7.00 I will sell it for \$3.50. I when new. I will sell it for \$3 50. I have a new Ferris, single-basket wax have a new Ferris, single-basket wax extractor, list price \$3.50, would self for \$2.50. I have a new, Doolittle, solar wax extractor, list price \$3.50, would self it for \$2.50. I have ten dozen, 1-pound, square, flint glass, Muth jars with corks, worth 50 cents a dozen, new, would sell at 30 cents a There are four dozen of the dozen. same kind of jars, only they hold two pounds instead of one and cost 62 cents a dozen when new. I would sell them at 45 cents a dozen

W. Z. HUTCHINSON,

0

19

This is the original one-piece section-man who furnishes one-piece sections as follows:—

500 sections, \$1.88; 1,000 for \$3.25; 3,000 for \$8.90; 5,000 for \$13.00; 10,000 for \$22.60.

No. 2 sections are not made to order, but when in stock are sold at \$1.80 per M.

J. FORNCROOK,

Watertown, Wisconsin.

Listen! Take my advice and buy your bee supplies of August Weiss: he has



tons and tons of the very finest

FOUNDARION

ever made; and he sells it at prices that defy competition! Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of Sections—polished on both sides. Satisfaction guaranteed on a full line of Supplies. Send for catalogue and be your own judge. AUG. WEISS, Hortonville, Wisconsin.

It that

REVIEW

Is mentioned when answering an advertisement in its coloums a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Some Pictures.

For some seven or eight y ars I have been working with a camera. I have read books and journals on I hotography, and studied the subjeer some thing is on tenkeepers and her-Legging Thire borned that there is a differones between the wand a minimum. The later mus not only please the eye, must appeal to our love of the beautiful and the picturesqu, but it must al o TELL US SOMETHING. It must awaken thought; n ust suggest more than is shown Then there must be technical perfection. We must rot have our attention distracted, or our pleasure marred, by bungling workmanship. Not once in a thousand times do we get a "chance picture." A real picture is studied over, and thought out, and planned, and exists in the mind of the artist long before he puts hand to the camera; which is simply the tool that aids him in pu ting his ideas into tangible, visible form. The more skillful the handling of the camera, the more perfect the knowledge regarding the processes of developing, printing, toning, etc., the more clearly and beautifully can the artist picture his ideas

Of the hundreds of views that I have taken, perhaps a few might be fairly entitled to the honor of being called pictures. There are four, in pa ticular, at which I never tire of gazing and I often wish that my friend, the readers of the Review, might enjoy them with me. I have thought about this so much, how subscribers might delight in having upon their walls pictures made by their editor's own hand, that I have decid d to describe these pictures, and allow my friends the opportunity of securing them.

THE OLD MILL DAM.

At the bottom of a deep gorge, its banks lined with thrifty lindens, drooping elms and dark green pines, somebody, years ago, built a high dam, with a mill close beside it, just above where a brook went tumbling down over a series of rocky ledges. The water comes down over the dam in thin sheets here and there, so thin that its liquid c'earness can be seen almost felt, and then, in filmy whiteness, goes dashing from one ledge of rocks to another into a limpid pool at their feet. In some places the black rocks can be seen through the delicate, white, misty ve:1s of water that hang in front of them. The dark holes up in under the big timbers forming the flume that carries the water to the mill are such as might awaken strange, weird fancies in an maginative mind. In sheltered nooks about

the old mill with its broken windows, robins build their nests, and, at evening, warble their vespers from the withered limbs of a tall, dead tone standing near to erail is the golden sunsaine, torowing into bold in Uki all things up in which it tals, anaking beginned contrasts with objects left in the shade, and filling the very AIR with its warmth and brightness.

IN THE SWEET SPRINGTIME.

This is a scene in an old apple orchard, taken at that season of the year when the whole country is one blush of bloom, filling the air with a fragrant sweetness; when fleecy clouds float lazily overgreen meadows, and, from topmost boughs, happy birds are cheering their mates sitting patiently upon nests hidden away among the branches be ow. Under foot the new grass is yet soft and tender, and the wide-spreading branches of the apple trees are almost hidden by the masses of pink and white promises of future fruitfulness. Almost instinctively, in looking at this picture, the bee-keeper listens for the hum of the bees.

WHERE THE SUNSHINE LOVES TO LINGER.

In Michigan, fifty miles north of Detroit, lies a farming country delightfully picturesque. Hills and valleys, cultivated fields and green meadows, clumps of evergreens and scrub-oaks, little gems of lakes and babbling brooks, big red barns and comfortable farm-houses, all combine in making a picture of comfort and coutent upon which the sunshine loves to linger. Last July I packed my camera, took the train for Davisburg, Oakland County, and was fortunate enough to fine a characteristic view just as the sun, very reluctantly, was giving up the lan scape to the coming twilight. In the foreground is a hay field, and the long shadows cast by the hay cocks and clumps of bushes show most conclusively that the sunshine clings as long as possible to the lovely scene with its brook, and lake, and hills, and farm-buildings, and beautiful, dreamy, white clouds overhead.

FAREWELL SUMMER.

Corn in the shock, big yellow pumpkins on the ground, goldenrod blooming in the fence corners, brown leaves falling from the maples, a mellowness in the sunshine that gilds the ripened corn, all proclaim that the reign of summer is ended

Into these pictures I have put my whole heart; spending days in selecting the scenes and the best points of view; in deciding upon the best time of day, and even the KIND of a day, in which to make the different exposures.

I would go more into detail in describing these pictures, but to every customer 1 will allow the privilege of returning pictures for any cause whatsoever. It would be no pleasure to me to have a friend keep a picture that he did not care for. With me this is not wholly a matter of dollars and cents—pride, and sentiment, and friendship will enter largely into the transferior.

Che cannes are say in class in size printed upon Arion Phurio poner, which has a matterface and is absolutely tabless, anomined upon heavy, to x 12, carbon-black mounts, and sent by mail thoroughly protected from injury.

They are suitable to be framed and hung in the home of any bee-keeper.

PRICES

The price of a single picture will be 75 cents; or I will send the Review one year and one picture for only \$1.50.

Two pictures will be sent for only \$1.25; or I will send the Review one year and two pictures for only \$2.00.

Three pictures will be sent for only \$1.7% or 1 will send the Review on year and three pictures for only 25%.

The whole four pictures will be sent for only \$2.25; or I will send the Review one year and the four pictures for only \$3.00.

W. Z. HUTCHINSON, FLINT, MICHGAN.

Here we are to the Front for 1900 with the new Champion Chaff - Hive, a comfortable home for the bees in summer and winter. We also carry a complete line of other supplies. Catalog free. R. H. SCHMIDT & CO.,

Pierr

MY GOLDEN AND LEATHER - COLORED

Italian Queens

Are bred for business and beauty. I furnish queens to the leading queen breeders of the U.S., and have testimonials from satisfied customers in the U.S. and foreign lands. Give me a share of your orders—they will be filled promptly. Tested queens, before June 1st, 3: so each Afre June 1st, tested queens, either strain, 3: so each; untested, 5: cls. each. One-frame mucleus with queen, 5: so; two-frame, \$2: so, three-frame, 5: 25.

4-00-tf

9-99-tf.

J. W. MINER, Ronda, N. C.

Shebovgan, Wis

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Please nontron the Review

FOR SALE,

Extracted Honey

From Utah and Colorado. White in color. Sixty-pound cans, (2 cans in case) 8 cents per pound. If less than 5 cases we charge 25 cents cartage to depot. Guaranteed pure.

S. T. FISH & CO., 189 South Water St. (Established 24 years.) Chicago, Ills.

FOR SALE

Apiary of 40 colonies of Golden Italians, in to-frame Doohtle hives, together with fixtures. Everything

up to date. Also beautiful buildings, consisting of 8-room, 2-story dwelling, barn and other out-buildings. Peach and pear trees, grapes, etc., in bearing. No disease. Healthy climate Mild winters. No better locality to be had than this to those who desire to embark in the bee business. Average yield of surplus honey, 50 pounds to the colony. Photographs sent to those interested.

J. W. MINER. Ronda, N. C.

Please men in the Review



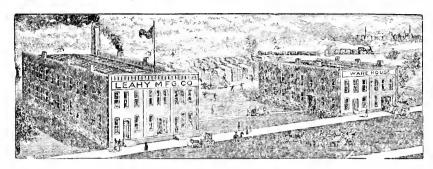
BEE-HIVES AND HONEY-BOXES.

in car lots—wholesale or retail. Now is the time to get prices. We are the people who manufacture strictly first-class goods and sell them at prices that defy competition. Write us today,



Interstate Box & Manufacturing Co., Hudson, Wis.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinued separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a daisy now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. Wo do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bae-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land; and we are now making of it more of an illustrated journal than heretofore. Price, only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. 60., Higginsville, Mo.. East St. Louis, Ills. Omaha, Nebraska.



Advertising Rates.

All advertisements will be inserted at the rate of 15 cents per line, Nonpareil space, each insertion: 12 lines of Nonpareil space make linch. Discounts will be given as follows:

On 10 lines and upwards, 5 times, 5 per cent; 8 rimes, 15 per cent; 9 times, 25 per cent; 12 times, 35 per cent

On W. lines and apwards, 3 times. 10 percent; 5 times. 20 percent; 9 times, 30 percent; 15 times. 40 percent.

On W. lines and upwards, 3 times, 20 per cent: 6 dimes, 30 per cent: 8 times, 40 per cent; 12 times, 5) per cent.

Glubbing List.

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FOR SALE.

I have a new, Van Allen & Williams honey uncreeor for sale. It has four bash is I the right size for extracting hapstoch echos, and they can be researched to a home line. The regular price of such machine is \$20,00, but I took this tell price of the bash income advertising and as I is a price of the control of the same of the control of the control

W. Z. Hutchinson, Flint, Mich.

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11 s 5 0	N J 130	W. Va 172
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		Wis 500

W. Z. HUTCHINSON, Flint, Mich.



Supplies Cheap.

Mr. L. B. B-ll, formerly of Brecksville, Ohio, has accounted a permanent position in Arizona, on livishes to dispose of his apiarian fixtures. He what is me about it, and I told him fine to add have then, shipped to me I would sell them for him on commission. Here is a list of the arricles and the price at which they are affected.

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8
58 Borrom Boards at
5.1 H m - Boards, Queen excluding at
3 : Escripes at
50 Feeders (Hecdon Excelsior) at 25
30 Alley, Queen and Drone traps, at 35

All of the above are in my possession and can be shipped promptly. The hives and cases are well make and nicely painted, and having been in the only two or three seasons are practically as good as new. Any one wishing to buy anything cut of this lot can learn fuller particulars upon inquiry.

W. Z. HUTCHINSON, Flint, Mich.

DADANT'S

Foundation

By the new Weed Process is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies, Send for circular.

Dadant & Son.

Hamilton, Ills'

G. B. Lewis Co.,

Manufacturers of

Bee - Keepers' SUPPLIES.

Factory and Main Office.

Watertown, Wis.

BRANCHES.

G. B. Lewis Co. and Phys. Ave. N. E., Monte challes, Minn

AGENCIES.

I. C. Woodman Grand Rapids Mich. Frod Lorigonics are Oglan, Utah.

E. T. Ald off. St. J. sec. h. Mo., Specific athwestern agent

Sections

We make millions of them yearly; workmanship, smooth ness and finish can't be better. The basswood grows right here. If you want some good Shipping Cases, you can get them of us. A full line of Bee Supplies on hand.

Write for iliustrated cata logue and price list free.

Marshfield

Mfg. Co., Marshfield, Wis.

Dittmer's Foundation

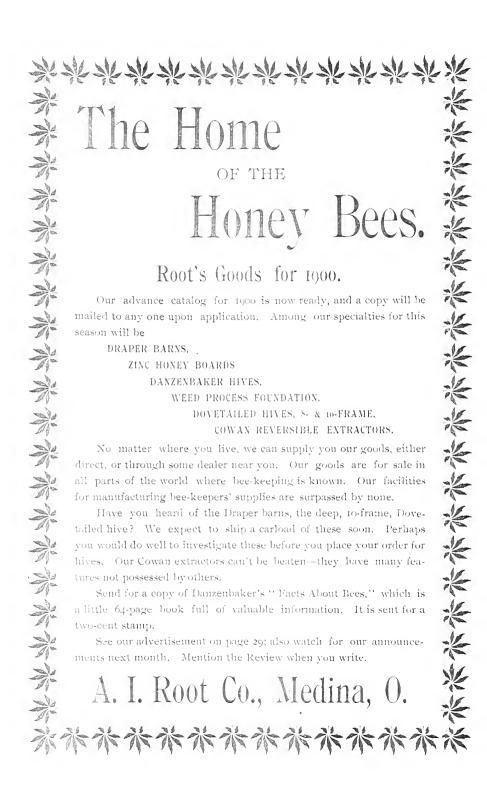
At Wholesale and Retail.

This foundation is made by an absolutely non-dipping process; thereby producing a perfectly clear and pliable foundation that retains the odor and color of beeswax; and is free from dirt.

Working was in a loundation for eash, a specialty. Write for samples and orices.

A full line of Supplies at the very lowest prices, and in any quantity. Best quality and prompt shipment. Send for large, illustrated catalogue.

GUS, DITTMER, Augusta, Wis.





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On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the Review with-

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Honey Extractor

FOR SALE.

I have a new, Van Allen & Williams honey extractor for sale. It has four baskets of the right size for extracting Langstroth combs, and they can be reversed automatically-without stopping the machine. The regular price of such a machine is \$20,00, but I took this one in payment for advertising, and, as I wish to get it into cash as soon as I can, I offer it for only \$15.00.

W. Z. Hutchinson, Flint, Mich.

Hames of Bee - Keepers. Type written.

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged alphabetically (in the largest States). and, although this list has been seenred at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2,50 per 1000, but I now have a type writer, and, by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own state only, or, possibly, in the adjoining states, can be accommodated. Here is a list of the States and the number of names in each State.

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Del 18	Maine, 200	Tex 270
Fla 100	Miss 70	Utah 68
7a90	N. Y., 1,322	Vt 160
Ind 744	Neb 345	Va 182
Ills 500	N J 130	W. Va 172
Iowa 500	N. H 126	Wash 128
		Wis 500
	W. Z. HUTCHIN	SON, Flint, Mich.

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61 Section Cases (Wide Frame and tin separators) at	
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6 ('overs at	.15
53 Bottom Boards at	.10
53 Honey Boards, Queen excluding at	.15
30 Escapes at	.15
50 Feeders (Heddon Excelsior) at	25
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W. Z. HUTCHINSON, Flint, Mich.

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Foundation

By the new Weed Process is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies. Send for circular.

Dadant & Son,

Hamilton, Ills

Sections

We make millions of them yearly; workmanship, smooth ness and finish can't be better. The basswood grows right here. If you want some good Shipping Cases, you can get them of us. A full line of Bee Supplies on hand.

Write for illustrated cata logue and price list free.

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BRANCHES.

G. B. Lewis Co. 111 Lirst Ave., N. E., Minneapolis, Minn.

AGENCIES.

I. C. Woodmer Grand Rapids Mich.
Fred Fordger & Sons Ogden, Utah.

E. T. Attact. Sc. J. soph. Mo., special Southwesternagent senders and or

Dittmer's Foundation

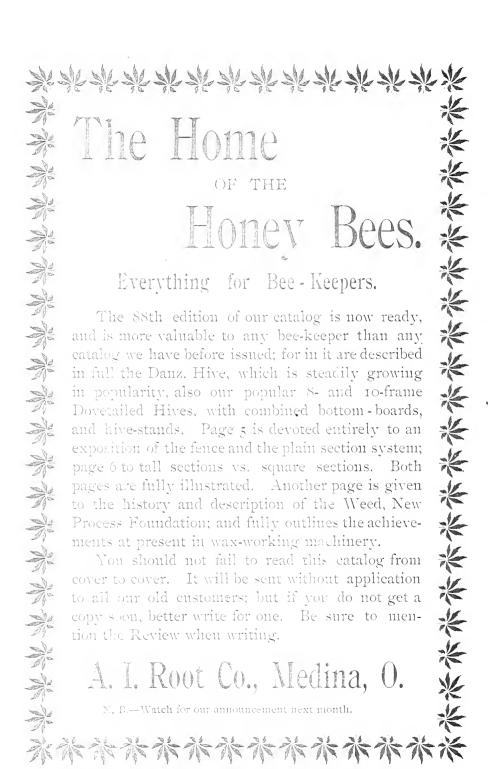
At Wholesale and Retail.

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Working wax into foundation for cash, a specialty. Write for samples and prices.

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On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with-

Gleanings, (new) (American Bee Journal (new)	\$1.000.12	1.75
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Canadian Bee Journal	1.00)	1.75
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American Bee Keeper	00)	1.40
The Southland Queen	(1.00)	1.75
Onio Farmer (1.00)	1.75
Onio Farmer (Farm Journal (Phila.)	(.50)	1.10
Farm Poultry	(1.00)	1.75
Rural New Yorker	(1.00)	1.85
Frank Leslie's Popular Monthly,	(3.00)	3.50
The Century	4.000	4.50
Michigab Farmer	7 1.00n	1.65
Prairie Farmer	(f (iii) .	1.75
American Agriculturist	(1.00)	
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ine independent (New TOLK)	(3.00)	
Ladies' World	(40)	1.25
Country Gentleman	(2.50)	3.15
Harper's Magazine	(4.00)	4.10
Harper's Weekly	(4.00)	4.20
Youths' ('or panion (new)	(75)	2.35
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EN

Reared by the best methods known.

Untested, single queen, 75 cts.; six for \$4.00; one dozen, \$7.50. Tested queens, just double these prices. Choice breeding queens, from \$3.00 to \$5.00. Circular telling how to introduce any kind of a queen, free.

E R. JONES.

3-98-12t

Milano, Texas.

Please mention the Review.

Bee - Keepers.

TYPE WRITTEN.

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Del 18	Maine, 200	Tex 270
Fla 100	Miss 70	Utah 68
(†a90	N. Y 1,322	Vt 160
Ind744	Neb 345	Va 182
Ills 900	N J 130	W. Va 172
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		Wis 500

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Dadant & Son,

Hamilton, Ills.

Supplies FROM Lewis.

Thousands of Bee-Hives, Millions of Sections, Ready for prompt shipment. We manufacture Five different styles of hives: All leaders and up to date.

Lewis' White, Polished Sections,

Acknowledged by all to be perfect. Not only do we make the finest

Bee - Keepers' Supplies,

But our packing case insures their arrival at your railroad station in a neat and perfect condition.

G. B. LEWIS CO., Watertown, Wis., U.S.A.

Branche -

G B Lewis C : So Alabama St., Indianapolis, Ind. G B Lewis C : First Ave , N. E. Manneapolis, Minn.

Agendas

L. C. Woodman, Grand Rapids, Mich. Fred Foulge: N. S. ars, Ogden, Utah, E. T. Abbott St. Joseph, Mo

send for Catalog.

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Marshfield

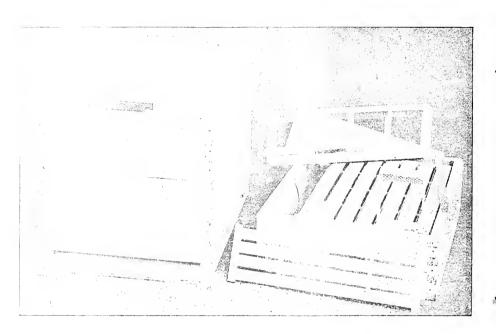
Mfg. Co., Marshfield, Wis.

Carniolans!!

The largest and finest stock in America. No other apiary in this country contains as many Imported Carniolan Queens as this. The gentlest, the hardiest, gather the least propolis; no beeveil needed; equal Italians for honey. Send for circular.

RALPH BENTON, "The Carniolan Apartes" (80) Harewood Ave., Washing, & D. C.

The Danzenbaker Hive

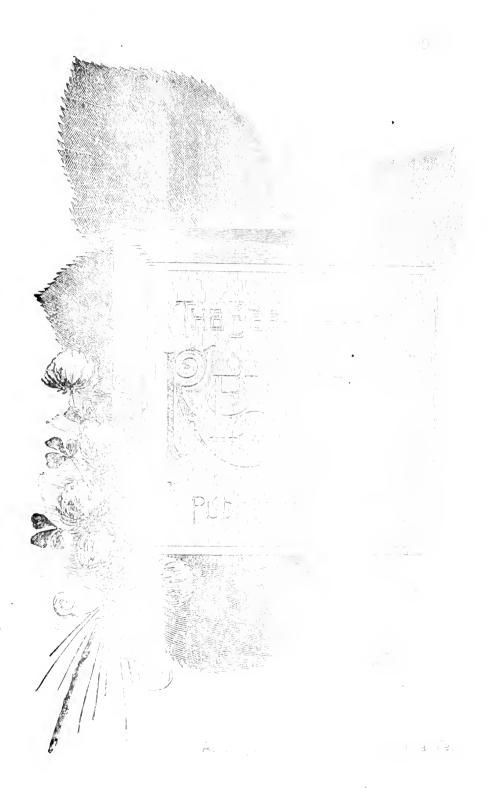


Seven Carloads Sold the Past Season.

If you have a market for *fancy comb honey*, you should not fail to try this hive. There are many reasons why it will pay you. In many of the leading markets, honey in these sections will bring from one to two cents more a pound than in the 4¹4, beeway. If you produce comb honey for profit, you should certainly investigate the merits of this hive.

Do you want the names of some of the leading bee-keepers who have tried this hive, and reported success with it from year to year? Do you wish to know all about this hive and the advantages of this style of frame and section? If so, write for Facts About Bees. Please enclose a two-cent stamp; as it is a 64-page booklet, full of information. This hive, as well as Facts About Bees, may be obtained of all our principal dealers, or may be ordered liven the factory.

The A. I. Root Co., Medina, Ohio.



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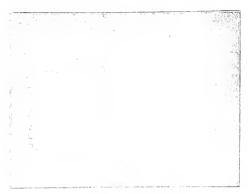
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lace Good Jaquiry. W. Z. EUTCHINSON, Flint, Mich.



Root's 5-Frank tailed Hive With the Laper.



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ch. C. M. Lincoln.

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THE BEE-KEEPERS'

Published Monthly.

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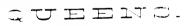
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E R. JONES

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W. Z. HUTCHINSON, Flint, Mich.

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Hives With Plain Sections.

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Root's Weed Foundation.

Be anning with the year ve put out a foundation having estrathin has a unlib a fer walls: each, heliter foundation, less nablone, less sag, and more ready acceptance by the bees. Send for estator and samples. Address The A. I. Root Co., Medina, Ohio, or when you can save uselut, one of the following branch offices:

※ ※※※※※※※※※※※※※※※ THE BEE-KEEPERS'
Published Monthly

At the it, Michigan One

All advertisements will be inserted at the rate of 15 mars per lime, Nonpared space, each insertion in more of Nonpared space make lines. Discounts will be given as follows.

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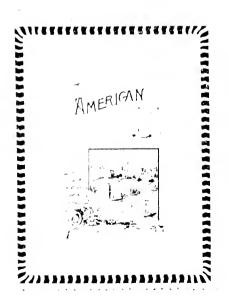
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Clubbing List.

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Names of Bee - Keepers.

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W. Z. HUTCHINSON Flint, Mich.



Supplies Cheap.

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All of the above are in my possession and can be shipped promptly. The hives and cases are well in the and incely painted, and having lown in one only two or three sensors are practically as good as new. Any one wishing to buy anything out of this lot can learn fuller particulars mean monitority.

W Z. HUTCHINSON, Flint, Mich.

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Dadant & Son,

Bee Supplies from Lewis

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Bee-keepers' Supplies,

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Sections

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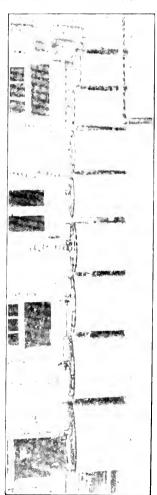
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Honey Extractors.

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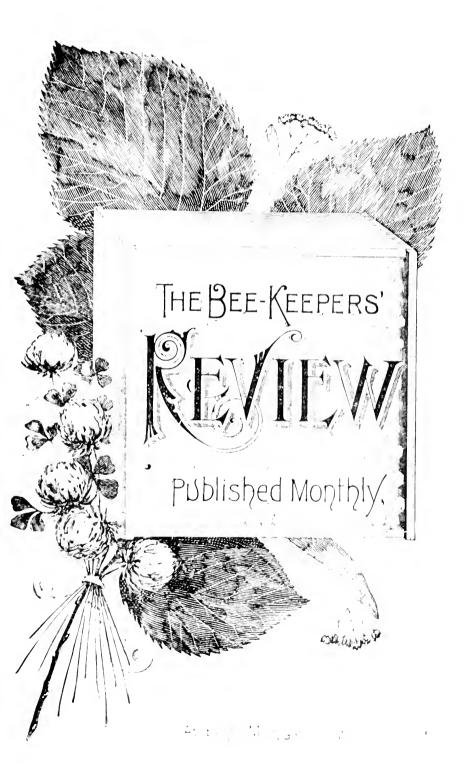
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ply you. Let us hear from you supply dealers. No matter where you live, we can Our regular sizes are carried in stock by

The A. I. Root Co., Medina, Ohio,



All absences ones will be inserted by the rate of 15 cms. The Nonperior space make lifted becomes out of Nonperior space make lifted breeze of the angle of the space of the s

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Names of Bee-Keepers.

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W. Z. HULLCHINSON Flint, Mich.

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Dadant & Son,

SPECIAL NOTICE.

Sections

We make nullions of them yearly, workmanship, smooth ness and fanish can't be better. The basswood grows right here. It you want some good Shipping Cases, you can get them of us. A full line of Bee Supplies on hand.

Write for illustrated cata logue and price list free.

Marshfield
Mfg. Co., Marshfield,
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ROOT COMPANYS PAGE.

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The A. I. Root Co., Medina, O.



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Printical, Progressive Illustrated Journal for Rec. Keepers

The W. T. Palsoner Mrg. Sc.,

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Names of Bee-Keepers.

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W. Z. HUTCHINSON, Flint, Mich.

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W Z. HUTCHINSON, Flint, Mich.

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Dadant & Son,

Hamilton, 111s.

SPECIAL NOTICE.

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The A. I. Root Co., Medina, O.

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Names of Bee - Keepers.

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W. Z. HUTCHINSON Flint, Mich.

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W. Z. HUTCHINSON, Flint, Mich.

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Dadant & Son,

Hamilton, Ills.

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The A. I. Root Co., Medina, O.



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Names of Bee - Keepers.

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W. Z. HULLCHINSON, Flant, Mich.

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W Z. HUTCHINSON, Flint, Mich.

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The A. I. Root Co., Medina, O.

THE BEE-KEEPERS Published Month

ADVERTISING RATES.

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Names of Bee-Keepers.

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W. Z. HULLCHINSON Flint, Mich.

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W Z, HUTCHINSON, Flint, Mich.

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Dadant & Son,

SPECIAL NOTICE.

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1 . A. I. Root Company, Medina, O.

THE BEE-KEEPERS' Published Monthly.

ADVERTISING RATES.

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W Z HUTCHINSON Flint Mich.

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Dadant & Son.

Hamilton, Ills.

SPECIAL NOTICE.

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